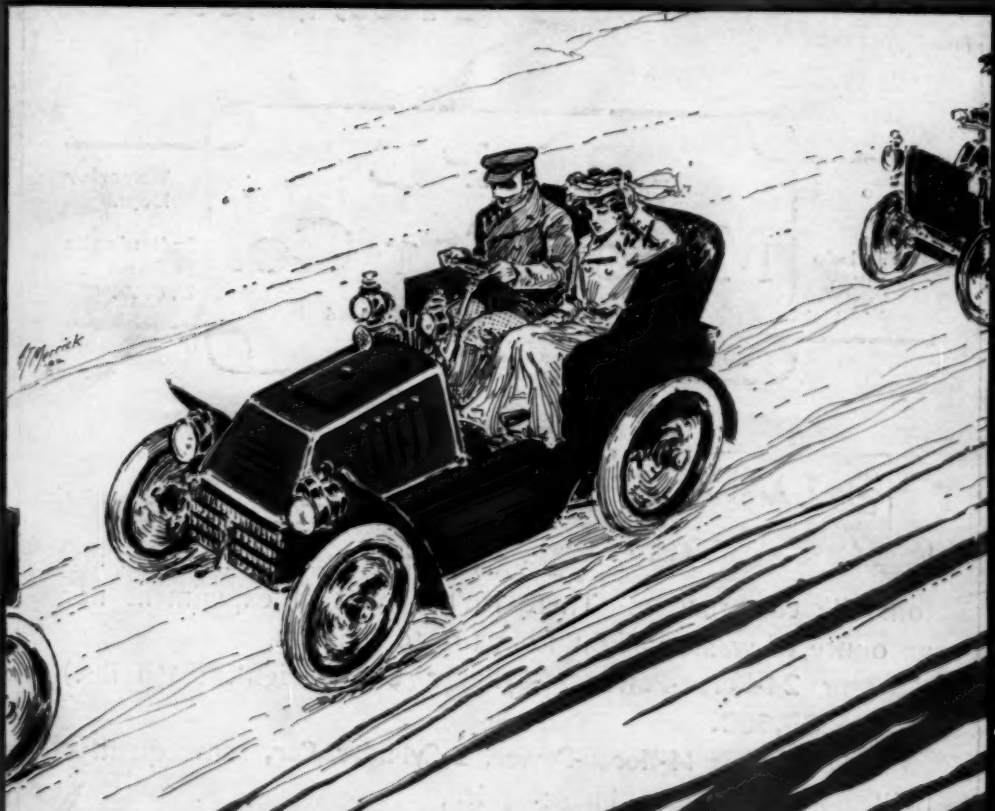
THE AUTOMOBILE MAGAZINE

Price Twenty Five Cents

April, 1904



Volume VI

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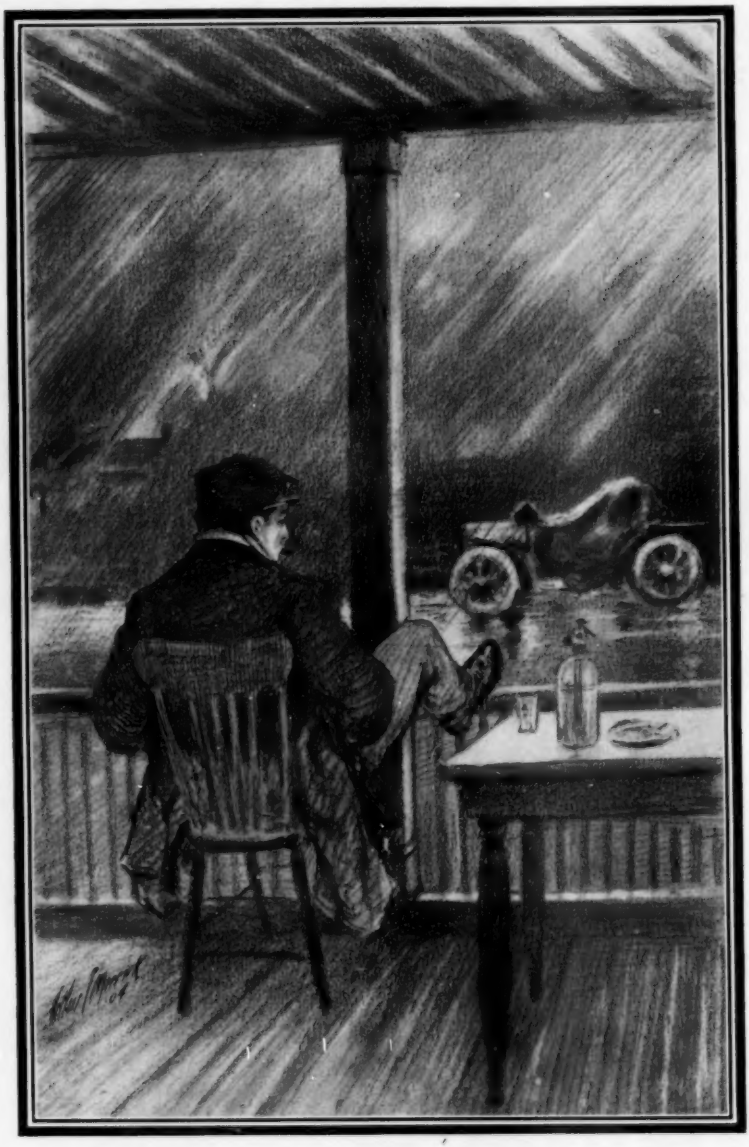


APRIL

THE
AUTOMOBILE MAGAZINE

VOL. VI. APRIL, 1904 No. 4

Effects of Gyroscopic Action on Steering

By Terence Grenholme

WHEN traveling on a high-power motor-car, if the driver incautiously takes a bend of the road at too great a speed the car is likely to overturn, or the wheels collapse under the tremendous strain, or (in the case of a racing car having a low center of gravity) the car is forced violently outwards against any obstacle, in spite of the efforts of the driver to keep an inside course, the result being a bad smash up.

In view of the many accidents which have happened, drivers of new or untried cars should be particularly careful in the forthcoming Gordon Bennett race, because there are some ugly corners on the course; consequently, competitors who mean business will have to run great risk, owing to the fact that the excessive side strain cannot be calculated or controlled by the steering wheel.

What I wish to call particular attention to is that these lamentable occurrences are generally supposed to be caused by the centrifugal force which is created by taking the curve at too high a speed. I admit that to a great extent this is so; but the following experiment will prove that the gyroscopic action set up in the road wheels and in the engine flywheels must seriously affect the steering of fast cars.

Take a spare wheel, preferably a light runabout wheel, and having grasped the axle firmly with both hands, get a friend to spin the wheel as rapidly as possible by striking the spokes; or, should an engine be available, place the tire against the flywheel, and when the runabout wheel is revolving at a high speed it will be noticed, firstly, that the wheel can be moved easily in a straight line, as if fixed to a motor-vehicle traveling on a straight course; secondly, bodily translation of the axis parallel to itself produces no gyroscopic effect, but any other movement is powerfully resisted (other than in its plane of revolution). This resistance increases in proportion to the speed, diameter of wheels, rate of revolution, and sharpness of curvature.

The numerical value of these gyroscopic effects under such varying conditions could only be ascertained by experiment; and even then allowance would have to be made for centrifugal force and non-synchronous action of the engine, which sometimes occurs at certain critical speeds.

Seeking an explanation from an engineer who is credited with being an expert in mathematical analysis, I found how little this subject is understood.

He said: In the case of a motor vehicle turning a corner, the steering-wheels have already been diverted from their original plane of motion before

this gyroscopic action takes place. Let me point out that it is the very act of diverting the wheels from the original plane of motion which produces the action to which I have called attention.

In turning a corner the gyratory action generated in the four road wheels and in the flywheel of the engine has to be counteracted, thus putting a strain upon the road wheels and the steering gear quite separate and distinct from, and additional to, those effects caused by centrifugal force.

One remarkable peculiarity of this gyroscopic action is that it has no tendency to upset the car, as is the case when centrifugal force comes into action from excessive speed round a sharp curve, or from bad steering. On the other hand, it tends to keep the car, as one might say, straight on the road. An excellent example of this action is seen in the Whitehead torpedo, which is fitted with a gyroscope to compel the vessel to continue in a straight course through the water.

An express train, traveling at a high speed, has the same tendency to continue running in a straight line; but it has this advantage over a motor steered by hand, that it is compelled to follow any curve, because it is guided by the rails; but even with this additional security engine-drivers know there is danger of derailing, and generally slow down when nearing a curve.

The flywheel of the gasolene motor being usually heavier than the road wheels, and the speed very great, this gyratory force is much more evident in the flywheel and other revolving parts of the engine than it is in the road wheels. It is the position of the engine on the car to which I attribute this gyratory disturbing effect upon the steering.

Speaking purely from a racing point of view, I believe that it would be safer if the engine was placed in the center of the car, where there is the least turning movement, with the cylinder fixed horizontally and the axle vertically. This would allow the car to turn in any direction without altering the plane of revolution in the flywheel. The diameter of the road wheels is an important matter because increasing the diameter of the wheels unnecessarily exaggerates the defects which I have pointed out. I admit that any radical alteration in the position of the engine, etc. presents serious difficulty; but I am of opinion that some alteration is urgently needed to ensure the safety of fast racing cars. Any structual alterations which will reduce this tendency would at the same time greatly increase the durability of the cars, especially in regard to the tires.

He Tried to Warn Him

The automobile sped heartlessly down the country thoroughfare scaring the gizzards out of chickens, geese, pigs and small boys en route. As the scorcher in charge neared a hill where there was a large boulder conspicuously present a young native rushed frantically to the road and said:

"Hi, m-m-m-ister, your t-t-t-t-t-t-t-t——"

"Ah, go chase yourself!" shouted the speeding one.

"But, say, your t-t-t-t-t——"

There was time for no more, and as he sadly eyed the remains that ornamented the boulder he mused:

"An' he wouldn't le-le-let me t-t-t-t-t—tell him that his t-t-t-t-t-t-t-tire was c-c-coming off!"

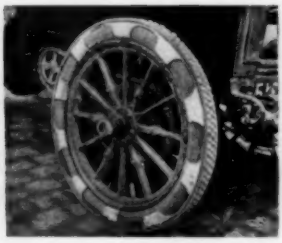
Quite So!

"A dog that runs under a carriage is called a carriage dog, is it not?"

"Certainly."

"Well, what would you call a dog that runs under an automobile?"

"Why, a dead dog!"

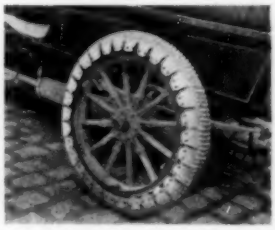
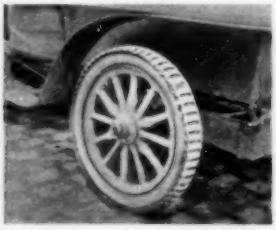

Side Slip Prevention

By René Dupré

WHETHER it is the differing temperaments of the people or the adverse conditions which prevail abroad, certain it is that there is not in America that all absorbing, never ceasing fear of side slip, which pervades European automobiling from top to bottom. It can not, of course, be denied that, in America as everywhere else, the motor vehicle ofttimes takes the most unexpected methods to exhibit its objection to the application of the brakes, but this "skidding," so called, does not seem to be considered here anything like as seriously as it is regarded abroad. However, any means of ridding the vehicle of this inclination to proceed sideways or to turn turtle would meet with as hearty a welcome here as it would any place else, provided the side slip eliminator is not some unsightly complex affair which would make the proposed cure worse than the ill it was aimed at.

Great Britain is first and last the native land of the skiddermaniac, and some of the inventions which result from this have indeed been most fearful and wonderful affairs, but it seems to have remained for Frane, as is usual in all matters appertaining to automobiling, to be the first to really take hold of the matter in a competitive fashion. To the credit of the Frenchmen it must be said that in this, as in all other contests of a similar nature, they have proceeded in a thoroughly workmanlike manner to test the various claims of all the skid killers which were not afraid to give their theories practical demonstration. To the Frenchmen, therefore, automobilists owe still another debt for the Seine and Oise Club's anti-skid tests.

Entries were limited to vehicles carrying four passengers, with a total load of not less than 660 pounds. Any anti-skid maker could enter, but he was not permitted to compete with more than one set of skid preventers of the same diameter, though he could enter an unlimited number of cars with the same device upon each providing that upon no two entries were the devices of the same diameter. Twenty-six vehicles out of the thirty-four entered, took part in the


tests, the scene of which was the Picardie Hill, on the road from Paris to Versailles.

The tests were planned to extend over four days. The first consisted of sending the vehicles over a thousand feet of road, each vehicle being compelled to do this with and then without its anti-skidders, the object sought for being to show how the appliances acted upon the speed of the car. The final test was held over two differing roads passing through Versailles, one of which was macadamized, the other block paved, each being made as slippery and insecure as greasy mud, liberally applied, could make them, and over which the competing cars had to be driven at a rate of speed not less than 25 miles an hour, and then suddenly apply the brakes or make sharp turns at the same speed at the word of command. These last-named trials were only open to cars that had distinguished themselves in the former trials. After the whole active competition was complete, each apparatus had to be taken off and examined to see in what state of repair it remained. The results were calculated by the application of the following scale of points:

	POINTS.
Non-skidding when brakes are suddenly applied	100
Non-skidding on sudden turns	100
Wear and tear	80
Protection of the cover and inner tube	80
Loss in road friction	60
Facility of replacing worn parts	20
Facility of adaptation and application	20
Average speed of the car	20
Catalogue price	10

On Sunday, the vehicles were submitted to the final tests, which consisted of—

(1) Stopping the cars suddenly on greasy "pavé" by braking the wheels when traveling at about 25 miles per hour, the distance being measured to where the car came to a standstill from the point where the signal to stop was given.

(2) The cars were then required to turn on a piece of greasy road, any deviation in the process from a white line, painted thereon, being carefully noted by the judges.

(3) Tests were then made of the cars on a flat road on double bends when applying the brakes, any deviation by reason of side slip over the marked course being noted as before.

(4) The same test was repeated on a flat road as in No. 1 on "pavé."

With the thoroughness which marks all such affairs in France the judges made no awards, nor will they until a mass of documentary evidence and record has been carefully gone over and thoroughly considered. The illustrations herewith give a fair idea of how the various inventors have sought to avoid the discomfort of having the vehicle go on its own sweet way solely because its owner does not want it to go at all.

A Fable

Once upon a time a faithful horse found that his master was using him less and less, and the neglect made him extremely unhappy, though he could not account for it.

One day while in his pasture, he saw his master flying down the road in a vehicle that moved very rapidly, though there was no horse attached to it. He made inquiry and learned what had brought the change in his life.

"Alas!" he sighed, "I have lost my prestige, and the automobile comes first."

Moral: The cart is before the horse.

Its Saving Point

"There is only one thing that I like about the racer Fergus McPhaster uses on the roads."

"What is that?"

"It doesn't shy at another of its own species."

Oil and Its Products

By John R. McGuffy

WHEN the discovery of petroleum in quantity first permitted the use of the mineral on a large scale, it was manufactured only for the illuminating oil which it contained. Of the Pennsylvania crude oil, this constituted 50 to 54 per cent., or even more; by one process, as much as 70 per cent. in illuminating oil was obtained. The remainder was all, or practically all, waste.

Gas was produced in the earlier stages of the distillation, but whatever inflammable vapors the crude oil gave off before it reached the temperature at which illuminating oil would boil, were burned, though sometimes as fuel.

A South African Post Card Freak

Tar, pitch, or residuum remaining in the stills after all the illuminating oil had been got out, was usually thrown away; more often than not, run into the creeks near the refineries. The manipulation of petroleum was thus the manufacture of kerosene; it was like the separation of lead only from an ore which also contained paying quantities of copper, silver and gold.

In the crude petroleum were a variety of other substances awaiting only isolation from the compounds with which they were mixed. Of fluids more volatile than kerosene, there was a whole group of naphthas; of substances less easily brought to a boil, there were such products as paraffine; paraffine oil, vaseline, a wide variety of other lubricating oils, and a number of sorts of pitch. Some of these were to be had simply by condensing and saving the vapors given off by distillation at different degrees of heat; some were available only after special processes supplementary to distillation had been carried out. In almost all cases, the product, once separated from other components of the petroleum or its distillates, needed to be carefully refined.

Little time passed before kerosene ceased to be the only material for which crude oil was treated by water, acid, alkali, and fire. The chemistry of the substance was fairly well known before the discovery of the great Pennsylvania fields in 1861. A substance very much like petroleum had been distilled in the late forties from the bituminous cannel found in parts of Scotland. From the heavy fluid obtained by heating this shale to about 800 degrees Fahrenheit and condensing the vapors resulting, the Scotch manufacturers were already making an illuminating oil in 1848.

For nearly forty years the competition has proceeded, though ever, to be sure, with growing proof that the British coal oil, despite economies of manufacture and ingenuities of invention, was no commercial match for the rock oil of the Americans. Partly in Scotland, partly in America, there has been worked out a system of the utilization of by-products for which, in brilliance and completeness, there are few parallels in

the whole history of manufacturing technique.

The products other than kerosene finally derived from petroleum show wide divergences in both their physical characteristics and the uses to which they can be put. Some of them are so volatile that at ordinary temperatures they take the gaseous form; others cannot be separated from the mother liquor short of a red heat. Certain of the commodities are solid; the majority, however, are fluids, though here again there is a wide range of difference in point of specific gravity. In a broad way they may be grouped as products obtained before and after the distillation of kerosene.

After the kerosene of commerce has been boiled off, with the help of jets of live steam, the tar, which used to be thrown away, is made to give up a large proportion of lubricating oil, about 17½ per cent. of the total weight of the crude material. Into the condensers, along with this oil, there passes also about 2 per cent. of paraffin, which can be separated by pressing after the distillate has cooled, and is then ready for the filtering and other purifications which fetch it out finally as a white wax.

Of the whole weight of the petroleum scarcely 10 per cent. is lost in manufacture when the process is arranged to extract this considerable proportion of lubricants. When the still is so built and the firing conducted that the highest practicable quantity (about 70 per cent.) of illuminating oil is taken out—this by continually condensing a part of the evaporated oil—the waste is less than 11½ per cent.

The products of each stage of the process are put to some use. Valuable chemicals even are recovered from the sludge or tar precipitated when the kerosene is mixed with oil of vitriol, and portions of it serve well as fertilizer. The refining of the lubricating oils by further distillation produces small quantities of an illuminating oil, less inflammable than kerosene, and this is used by railways and steamboats as a substitute for sperm oil.

Of the lubricating oils, as of the kerosenes, there are many varieties and grades, each more or less adapted to some special group of uses. A different sort of oil is used in a library lamp from that served to the heater of a steam automobile; the bearings of an automobile need a grease different from that used on heavy, slowing-moving gears. The preparation of these varieties forms an elaborate technique of itself, the subject matter being complicated by the fact that petroleum lubricants, when added to animal fats, impart to them their non-inflammability except at high temperatures and their qualities of not gumming and of resisting the deteriorating effect of the air.

When the distillation is carried on in a vacuum, the residue, once the paraffin is extracted, has characteristics of its own. One of the last products to be thrown off is the neutral and heavy grease, the petroleum, known indifferently when refined as cosmoline or vaseline. The purification of this material is accomplished while it is hot by filtering through animal charcoal, like many of the lighter oils. It serves either as a lubricant or as a base for ointments, preferable in many respects to animal fats, for which it has been largely substituted in the pharmacopœia. The residuum after everything possible has been take out of the crude still has some though only a slight value. Enough heavy oil remains, in certain varieties, to make them useful as coarse, cheap lubricants, while others serve as tars.

Petroleum and its products are applied in surgery and medicine; in the making of ice and the production of

light; in paint manufacture and the preparation of oilcloths; in the manipulation of rubber and in washing wool. Where it is cheap, it replaces coal; in almost all modern plants some one of the petroleum derivatives is used for the enrichment of gas. For general lubrication, the paraffin oils are the most serviceable products machine-users know. Altogether, over two hundred different products are now derived from this treasure of the rocks, which refiners first treated merely for the sake of a fluid used for filling lamps.

Getting Rid of Sparking

By Jules Dupont

LIKE all things mundane the explosive motor is not perfect, and no one knows this better than the user in an automobile of this form of engine. Not the least of the engine's imperfections has been the often unsatisfactory firing of the explosive mixture in the cylinders.

Recognizing the great waste of energy which is caused by the quick expulsion of the exploded mixture from the engine ere it has parted with the greater portion of its heat, a French engineer, M. Chevalier, has endeavored to make use of it in some way, and it would seem that his experiments so far have proved successful.

To accomplish this M. Chevalier utilizes the flame which rushes through the exhaust port of one cylinder to ignite the fresh charge in another cylinder. This idea can, of course, only be adopted with multiple-cylinder engines; but as the single-cylinder motor is going out of favor, and as the new method is applicable to any multiple-cylinder, it has a big field before it should it prove really practicable under service conditions.

By connecting a series of small tubes with the exhaust valves, and coupling up one cylinder with another, M. Chevalier has contrived that portion of the exhaust gases from one cylinder will rush as a tongue of flame into the next cylinder at the proper moment and explode the charge. When this cylinder is fired it will similarly send a flame into the first cylinder, and thus the cycle of firing is made complete and continuous.

Valves worked from the cam shaft govern the time of the flame entering the cylinder, and by a simple and ingenious arrangement this time can be advanced or retarded, thus altering the time of firing as in electric ignition. This is an most important feature and gives the new system a great advantage over all other ignitions save electric. On starting the engine the first explosion is caused by an electric spark or other device, and after that the automatic firing comes into use.

The new ignition costs nothing; the mechanism appears very simple, and what the French term "robust." Should this system succeed it will render the ignition apparatus the most reliable part of the motor system instead of being one of the most fickle. All trouble with batteries, coils and plugs will vanish, and the labors of the recording angel will be very greatly lessened in consequence.

All That Goes Down

"All that goes up must come down," said the captain as the laboring launch lowered to meet another big wave.

"Poor rule don't work both ways," retorted the pea-green guest, making a wild dash for the open window.

A Five Hundred Mile Auto Test Run, January, 1901*

By Hiram Percy Maxim

[*Concluded from March Number.*]

CREW No. 3 were due to return at 5:50. At 5:30 crew No. 4, consisting of Mr. F. A. Law as driver, and Mr. T. W. Goodridge as passenger, started preparations. At 5:50 they were ready and sweltering in their heavy furs and wraps. It came to be 6:10 with no appearance of the machine, and crew No. 4 found it necessary to remove some of their wraps; 6:30 finally arrived with still no appearance of the machine, and grave doubts arose in the hearts of every one.

Finally at 6:35 the machine arrived apparently in full vigor, but thoroughly snowed up. It had lost 45 minutes. Mr. Howarth reported the accelerator wire, which enables the foot press in the floor to pull open the accelerator valve, as having broken, but everything else in good order, and that no difficulties had been experienced in the operation of the motive mechanism. The gasolene and other measurements were immediately taken and freshly filled headlights substituted. Crew No. 4 then took possession and departed, the start being made at 6:50.

The thermometer registered 2° below zero. The wind was still extremely high, but the snow had ceased falling. There was every prospect of a very bad night.

Mr. Law, the driver, not being able to use the accelerator, would probably not be able to make any very fast time, but we agreed with him, when he decided to start without it, that the conditions were such that even if he had it he would not be able to very often use it.

Mr. Howarth reported as his excuse for being 45 minutes late in his arrival that his mate's watch had stopped. He stated that he passed Windsor five minutes ahead of time, Windsor Locks ten minutes ahead of time, and arrived at Springfield half an hour ahead of time. He said that he was so benumbed with cold that he decided to use some of his time by getting out and running behind the wagon, which he and his passenger did by turns. He said after running what seemed to be a good half hour this way, they looked at the watch again and found that it was precisely where it was when they crossed the bridge at Springfield. They then appreciated the fact that the watch had stopped, and that it would be necessary to hurry to endeavor to make up time, they not having any idea how late they really were. Being now dark, they could not run fast, and this, together with the necessity of getting out and running behind the machine to get warm, caused them to probably still further lose time. They reported that the engine had not stopped, but that the vehicle had stopped once for the getting into and out of the automobile. He also reported that everything had operated perfectly, despite the severe conditions. Neither reported any frostbites, although the most intense discomfort due to the cold and the high, snow-laden wind, which can be imagined when it is understood that they ran 26 miles directly in the face of a bad northerly gale and in a zero temperature.

Crew No. 4 was due back at 9:50. Crew No. 5 was ready at 9:45. 9:50 came around with no machine, but we excused it on the ground that being 35 minutes late in starting, we could not expect them back before 10:50, considering the intense cold and dark, and the fact

[*Mr. Maxim's story covers the first exhaustive road test given a gasolene automobile in this country. The run took place January 18-20, 1901. In view of the wonderful development of the American gasolene car during the last three years, the article makes remarkably interesting reading at this time.]

that there would be no distinction between the road and ditch.

10:50 came around, however, with no signs of the machine, and crew No. 5 began to wonder what was in store for them. The thermometer indicated a falling temperature. Finally at 11:15 the familiar head-lights were seen and a moment later the machine ran in, covered with snow and with its passengers bearing every indication of being rigid with the cold. They reported the machine in good order, so without waiting for their story, the measurements were immediately taken and crew No. 5 prepared to start. It was then discovered that the rear left tire was flat. Questions of Mr. Law, the driver, threw no light upon this, as he was entirely unaware that he had been running on a deflated tire. It being a single tube tire, deflation and running deflated did not necessarily cause it to be thrown off. Air pressure was hurriedly obtained and the tire inflated, but a bad leak immediately developed at a sharp cut that had evidently been made by striking some sharp piece of ice when running at high speed. This necessitated the removal of the tire and the substitution of a new one. It was hurried all possible, the engine being kept running while it was being done. The opportunity was accepted to put in a new accelerator cable to take the place of the one which had been broken. When the broken one was removed it was found that the breaking was due to the absorbing of water by the cable, which, after freezing made the cable rigid. Bending it in this condition caused breaking. It was hemp core phosphor bronze cable.

MR. MAXIM IN THE RECORD BREAKING VEHICLE

The new tire was finally in place and reinflated and things ready for a restart at 12:06 A. M. Crew No. 5 departed at this time, having every promise of a severe four hours' run ahead of them. Their departure was quite dramatic. Disappearing in the dark, their head-lights showing large red bull's-eyes to the rear, and their bundled up figures looking like almost anything but human beings, they made a good picture.

Mr. Law, the driver of crew No. 4, reported that he had inadvertently stopped the engine once. He stated that in a frozen rut, which others of us had reason to remember, he had been unable to keep the road, the machine holding the rut, notwithstanding the cramping of the steering wheels. He lost control and ran down into the roadside ditch and hard up into a snowbank before he knew what was going on. This, of course, stopped the vehicle, but did not stop the engine, owing to his having opened the clutch. He put in what he thought was the low gear, but which afterward turned out to be the second, and throwing in the clutch quickly in his excitement, stalled the engine. He said he immediately got out and restarted it and, with the low gear, worked back on to the road. This all happened in the little settlement of Agawam, Mass., about twenty miles from Hartford. This twenty miles added to the three previous round trips made 182 miles that the engine had run without stopping. Mr. Law stated that the length of his stop was only long enough for him to get out and turn the starting crank, and that it could not have been longer than 60 seconds.

He said that the cold had been intense, and that his passenger, Mr. Goodridge, had found it necessary to get out several times and run behind the vehicle. This continued for some distance, Mr. Goodridge mounting the rear groom's seat for short periods and then dismounting and running along again. In this way one of the blankets was lost overboard. The blanket being a valuable one, when its loss was discovered they felt compelled to turn around and look for it. They were successful in finding it about a mile and a half back on the road.

Mr. Law warned subsequent drivers of the very dangerous rut, which was well known to most of us, and which had nearly been his undoing. He reported all important parts as functioning as well as could be desired. He said the schedule could not be adhered to on account of so much getting out and running behind being necessary to avoid freezing.

Crew No. 5, consisting of Mr. F. C. Reineking as driver and Mr. J. H. Jones as passenger, would not be due back until at least 4 o'clock, and in all probability would be later, owing to the fact that they were considerably impressed with the difficulty of their undertaking. Finally at 4:50 they appeared, coming in entirely iced up, but not so badly snowed up. Apparently every bit of breath which either of them had exhaled had frozen on their outer garments. The whole front of their headgear was sheathed in a thin coating of ice.

Mr. Reineking reported the engine as missing explosions, and said he believed that there was a break in the ignition circuit. Considering the terrible jolting and jarring the vehicle had so far experienced on the frozen ruts, we were all inclined to believe it, and an examination was immediately made. Nothing was discovered, the engine running idle perfectly. This and the fact that we were not able to find anything wrong led us to merely increase the tension on the brush contact of the igniter, pulling it off while the engine was running and depending upon the momentum of the fly-wheel to keep it running, while with our fingers we stiffened the spring.

Crew No. 6 then started at 5:45, almost an hour having been spent in our fruitless search for something wrong, the engine running meantime. Just as we were all seeking our bunks, expecting four hours' rest before the machine came in again, the clanging of the bell was unexpectedly heard and it reappeared. Missed explosions were reported again immediately upon getting on to rough roads, and the return to the factory had been made rather than to attempt the

long run in the country, with the possibility of the missed explosions becoming more frequent, and either causing the entire stoppage of the engine, or greatly adding to the amount of time we were already behind.

It was decided to stop the engine and remove the igniter plug as quickly as possible, put in a new one and restart. Preparations were made so that the length of time the engine would have to be stopped would be the minimum. The key was pulled and the engine stopped. The plug was found to be apparently in perfect order, which at once precipitated a discussion as to whether or not it was the cause of the trouble. After testing it carefully and thinking the matter over, the writer decided that the spare plug in the tool box would be put in, the old plug being saved and carefully taken apart later and examined. The new plug was put in, the wire connected and at the first pull of the crank the engine again took up its rhythmic beat. Crew No. 6 rearranged themselves, and after what seemed a most unnecessary delay, restarted, getting off at exactly 6:30, and consisting of Mr. H. W. Alden as driver and Mr. F. D. Howe as passenger.

The igniter plug was now examined. Upon removing its cap it was found that it had hardly any packing, the gland intended for the packing being only about half full. This had allowed a knocking of the porcelain to an extent which had finally cracked it, causing enough leakage of spark to miss explosions.

Much interest now was felt as to the luck of crew No. 6. Most of us felt sure that the igniter plug was the cause of the trouble. We all decided that if it was, and considering that the roads were bad and the cold worse than on the run starting at about the same time the day previous, four hours would be taken and the return made in the vicinity of 10:30. All hands turned in for the much-needed four hours' rest, which, however, was rudely cut short by the clanging of the bell and the arrival of the machine at 9:14.

Mr. Alden, covered with smiles, reported things in superb form and his determination to turn around and repeat the run. Only after much entreaty was he coaxed from the seat long enough to allow the measurements to be taken. Immediately rearranging himself, he restarted with Mr. F. A. Law as passenger, making the start at exactly 9:29. He said he had made the entire run from Hartford to Springfield on the high gear, and in a very hurried way repeated the old story of watch having stopped, his passenger's hat having blown off, the right headlight having been lost overboard, but no vehicle stop having been made.

The topic of discussion was, of course, what time he would make on this No. 7 trip. It was generally thought that he could not cut it down lower than three and a half hours, making his return at about 1 o'clock.

Our guesses were again upset, for at 12:10 we were startled by the clang of the bell as the machine ran in again. Again Mr. Alden declined to give up his seat, and only permitted the measurements to be taken, when off again with Mr. F. A. Law as passenger he started, making his departure at 12:24 and reporting that no vehicle stops had been made, the machine running superbly and having again made the entire run to Springfield on the high gear.

Mr. Alden's time for trip No. 6 was three hours and sixteen minutes. His time for trip No. 7 was two hours and forty-one minutes. We guessed that his return for trip No. 8 would not be as good as for trip No. 7, on account of it being Sunday afternoon, there being good sleighing, and as a result he prob-

ably would have in the country several horse experiences.

This afterward turned out to be the case, as his arrival back from trip No. 8 was at 3:35, his time having been three hours and eleven minutes. He stated that one stop had been necessary for an old lady driving a horse, alone, and who became confused and panic-stricken at the appearance of the automobile. It was necessary for them to back down the road and for Mr. Law to go ahead and lead the horse past and start the old lady off some distance from the automobile. Mr. Alden stated that there had been numerous minor horse experiences, all of which caused him to run comparatively slowly.

Crew No. 9 consisted of the writer with Mr. T. C. O'Brien as passenger. The departure was at 3:55, at an hour which in all probability would enable high speed, owing to the fact that it would be about supper time in the country and the roads probably clear. The temperature had risen considerably and was standing at 8°. The wind had changed, being strong from the south.

It was found that the machine was running in its best form, and, inasmuch as the road was found to be nearly open, an effort was made to make good speed. The frozen rut at Agawam was entirely frogotten in the excitement, with the result that it was nicely caught, causing the vehicle to give a frightful slew and plunge fully thirty feet down the road, broadside on. For the instant I gave up hope of being able to get out of the scrape without a smashup. It was, of course, useless to put on the brake, as the wheels were already probably stationary. The sliding continued until we began edging off the road toward the ditch, finally bringing up with the rear end in it. The shock caused the front end to swing around, and, evidently striking a hummock of ice, the operation was reversed, the rear end actually snapping back into the road. The broadside sliding then continued for another twenty feet, bringing up again in the ditch. To my infinite surprise, when we finally "came to," the machine was not capsized and the engine still running. I put in the low gear and managed to get enough traction to work back on to the road. Finding to my utter amazement that the machine would run, I put, with more bravado than confidence, the third gear in, finding that she took it as though nothing had happened. In a moment everything seemed perfectly normal and we were running along in fine style. In all probability not more than thirty seconds were lost in performing this most alarming pirouette.

We reached the South End bridge in Springfield at exactly one hour and ten minutes, which was the fastest time made. The distance is twenty-six miles. The speed had averaged 22.4 miles per hour. On the return trip nothing of interest happened, the arrival back being at 7:03, or a total of three hours and eight minutes.

It was my intention to repeat and make the last or No. 10 trip. Crew No. 10, consisting of Mr. Reineking and Mr. Anthony, were found prepared and most anxious to go, however, so way was given and they took command, departing at 7:17.

They were instructed before departure to exercise care in the dark, especially at the bad place in Agawam, and to avoid recklessness. Their return was at 11:45, having evidently followed instruction. Their report was that the weather had mollified immensely, that the roads were very slippery, and that one headlight was not light enough. The machine was in better shape than when it started out some forty hours previously.

The cyclometer on their return measured 538 miles. The total time taken from the time Mr. Law and the writer

started Saturday morning was 41 hours and 25 minutes. The average speed for the 538 miles was thus about 13 miles per hour. 37.25 gallons of gasolene had been used, or at the rate of 14.4 miles per gallon. With gasolene at 10 cents per gallon, the run cost .069 cents per mile for the total load of a little over a ton. 1.5 pints of lubricating oil were used, the lubricator having been opened at 6:15 Saturday morning and closed at the completion of the trip Sunday night. The engine when it stopped oscillated six times before coming to an ultimate standstill, which indicated that both the compression must be tight and all parts thoroughly lubricated and running freely. Considering the temperature, very little cooling water was used, as might be imagined.

The next morning a detailed examination of the entire machine was made and the results added to the data worked out from the detailed measurements taken during the run, of which some of the general features have been stated above.

It is of general interest from an engineering standpoint to know that the test clearly demonstrated the arrival at a state of the art in cylinder fired engine construction when absolute reliability in the severest kind of service can be said to be attained. No important part of the vehicle in question was found to bear any evidence of the severe strain to which it had been put. This may be judged by the fact that the writer a few days afterward used it in a run from Hartford to Boston and return. Several lines along which development and improvement in the explosion engine would be possible were clearly indicated, and the writer could not but feel, as a result of his experience, that the greatest possible promise lay in the future for this system of vehicle propulsion.

In regard to fuel consumption, in La France Automobile, November 10, 1900, following are figures of French test:

	Wt. lb.	Speed.	Gal. used.	1000 lb. miles per gal.
Georges Richard.....	1780	14.1	1.69	45.7
Mars.....	1960	17.8	1.78	47.8
Vigneaux,.....	1770	16.6	1.90	40.3
Panhard.....	1990	17.8	1.92	45.
Rochet et Schneider..	2140	17.1	2.39	38.9
Columbia, Neb. VIII[5].	2000	17.6	3.5	30.9

Replacing Commutator Chains Correctly

By T. J. Foley

IT should not be overlooked in the constantly growing practice of mounting a chain-driven commutator upon the dashboard that a great deal of difficulty will be experienced in getting the chain correctly replaced if for any purpose it is taken off. Of course, where a spur gear is employed to drive the commutator, it is then very easy to mark one tooth and the bottom of the two opposite teeth, into which it engages, thus insuring correct timing; but with a chain drive it is impossible to simply mark two teeth alone.

The difficulty may, however, be overcome to a certain extent by marking the rim of the wheel on the center line; it then becomes a matter of the eye in replacing the chain, and also one of memory to insure the marks being in correct positions, i. e., both marks should be at the bottom or top of the wheel, as originally placed when they were indicated.

It is a good idea, too, to have pointers attached to convenient parts, the marks on the chain wheel being brought opposite to these. In any case, it will, of course, be necessary to ascertain, roughly, the relative position of the crankshaft to the camshaft. Unless this is done, it is quite possible to get the setting incorrect, since while one wheel may be in correct position, the other may be a revolution ahead or behind it.

In a Few Years Hence

By Remington Vernam

IT was about ninety-eight or a hundred years from now—I never was very accurate about dates, but it doesn't matter. Broadway, which had been widened by tearing down all the houses on the right-hand side from Bowling Green to Albany, was crowded with what we would call automobiles or motor vehicles, but which were then distinguished simply by the name of vehicles or "veeks" for short.

Some of them were not going much faster than a hundred miles an hour, but these were of inferior make and belonged to pedlers and the like. Some of those owned by quintillionairs could and did keep up their 400-mile an hour clip day after day—but that, of course, was outside of the city. The laws respecting speed in Manhattan were necessarily very strict, and 150 miles an hour was the limit.

It was a Saturday afternoon, and the "veeks" were running north, for there was to be a football game at Toronto that afternoon between the Torontos and the Columbias, and all Manhattan was going up to it.

While this stream was speeding by an electric boat from Arabia came up the Narrows and ran into her dock at the foot of Wall street with as little commotion as if she had not left Arabia at 6 the evening before.

One of the first passengers to debark was an explorer who had just returned from a visit to the interior of Thibet, where he had been received with every mark of favor and had been shown the spot where Walter Savage Landor first lost his eyes.

There was nothing peculiar in this explorer, whose name was Stanley L. Pemberton, but the animal that his man led down the gangplank was queer indeed. It had been given to him as a parting gift by the Empress of Thibet, and the merest child of the present day would have recognized it as a horse. But 1998 is not the present day by a long shot, and it is needless to say that with the exception of Pemberton's fellow passengers there was not a soul in Manhattan who had any idea what it was.

He was black, with wide, red nostrils, a beautifully arched neck, flowing tail, slender ankles and, in the words of that poem that had formed so many reading lesons for the youth of a century previous, he had a "deep and fiery eye." He lifted his feet as daintily as a young woman would in walking across an omelet, and that he was proud of himself and his lineage was plain even to the coffee and sugar merchants of Wall street, who had never before seen a horse.

They crowded around him, after they had been assured he would not bite, and admired him.

"Say, isn't he a beautitoot?" said a sugar prince in the slangy language of the day. "Can he do any tricks?" (It should be said in passing that lions were the only animals known to civilized man at this time, and they did tricks in the continuous performances, so that this person naturally associated tricks with an animal.)

The explorer smiled with a knowing smile. "Well, I should hesitate to answer you negatively. He can pull a veek."

"Oh, run along!" "Back to Thibet for yours!" "Try to get away!" said various bystanders derisively.

This nettled the explorer, Mr. Pemberton, and he whispered to his man, who called to two sailors, and the three disappeared in the hold of the ship. A

few minutes later the men at the hatch pressed the proper button and a sidebar buggy was hoisted up from the hold.

He and his men harnessed the horse and then hitched it to the buggy amid wondering cries from the crowd, which was growing larger every minute, and at last he stepped into the carriage, tightened the lines, and the beautiful beast trotted up Wall street to Pearl and then back again, pulling the wagon as easily as a horse ever did such a thing.

To say that the coffee merchants and the others who were in the vicinity were astonished would be to state it with ridiculous mildness. They were beside themselves. One of them stepped to the downtown annunciator, whose long funnel gaped at high heaven, and which was erected at the corner of South and Wall streets in 1965, and putting his lips to the receiver he said in ordinary tones, "A most wonderful animal who can draw a 'veek' has just landed from the Arabian electric."

The ears of this generation would have been deafened by the volume of sound that poured forth from the big, black funnel, but there is no questioning the fact that it was an excellent way of spreading news, for every one within a radius of two hundred miles heard distinctly, and the news was so strange, so past belief, that many curious ones as far north as Albany, who had been on their way to Toronto, turned around and took the downward road to New York, which, by the way, was formed in 1940 by widening Fourth avenue and extending it from the Battery to a point one hundred and fifty miles due north, with cross streets at every five miles.

It would be useless to attempt to give an adequate idea of the numbers of people who tried to get near enough to see the horse and carriage. The President of Manhattan, fearing some one would be injured in the jam, finally ordered the ten-mile roadway hoisted into the air by the captive airships. This roadway, being built of plate glass, enabled people to see exhibits to better advantage than if they were placed on a level, and it was always used when crack regiments were to be put through their evolutions.

Mr. Pemberton drove the horse from one end of it to the other. It took him nearly two hours, and of course it seemed like creeping to the assembled millions, but its slowness pleased them.

Mr. Pemberton was a poor man, but as he drove along on the plate-glass "highway" he reflected with an almost bursting heart that before nightfall he would be worth a king's ransom. He was a judge of human nature, and he knew that this horse had made the hit of the century, and that there was not a man with blood in his veins who would not be anxious to buy him in order to revel in the new sensation of being pulled along the road by a slowly moving animal with a brain instead of shooting at weary speed by means of electricity.

And his expectations were realized, Jay Drexel Rockefeller, the richest man in America, offered him ten million dollars for the horse, and before the dawn of another day the plutocrat had taken Creeper (as he dubbed him) to his farm in California, and with his family all hanging on somehow, he went out for a five-mile ride. And so spirited was the horse that for the first time in ten years Jay had an appetite for supper and his family had seven different kinds of fright—for, while the gait was snail-like, the antics of the horse were terrifying.

Pemberton with his millions went back to Thibet to try to find a mate to Creeper. He was sure that horses would become the coveted luxury of the wealthy, but the Emperor told him that Creeper was the last horse upon earth.

When he died five pears later Rockefeller was a changed man.

"Ah," said he, "if I had known of the existence of these wonderful creatures in time to breed a new race of them I would be the happiest man in the world, for who can take pleasure in an insensate 'veek' who has been drawn around by a horse!"

When the Cup Racers Train

"No, grandfather, we must not cross the highway just yet."

"And why not, child?"

"Because, grandfather, the safety gates have been raised at the turn a half mile away, and the red ball is up on the signal station on the hill."

"Yes, I see. What does it mean?"

"It means that a Gordonbennetter is due and coming."

"But can't we get across before it gets here?"

"Not on your life, grandfather. The last man who tried it was thrown clear across yonder meadow and into a greenhouse. Look! There, it's gone!"

"I saw nothing but a whirl of yellow dust."

"That was it. Come, now. No, we must wait again. The yellow flag is up in the other direction. That means a race. There they go! See them?"

"I saw nothing but more dust."

"They were too quick for you. That was a bunch of millionaires. They get dreadfully reckless. Only yesterday we picked up what was left of one of them in our front yard, and there wasn't enough of him to fill a stein."

"Can't we cross now?"

"Dear, no. All the yellow flags are up and all the red balls are up, and all the signal men are signaling. They are coming from both ways. If we have real good luck we may see a collision. We get a commission at our house every time we report a collision to the coroner."

Killing a Squeak

When you have looked high and low for the squeak in a machine which annoys, particularly when traveling over rough roads, you suppose you examine the springs.

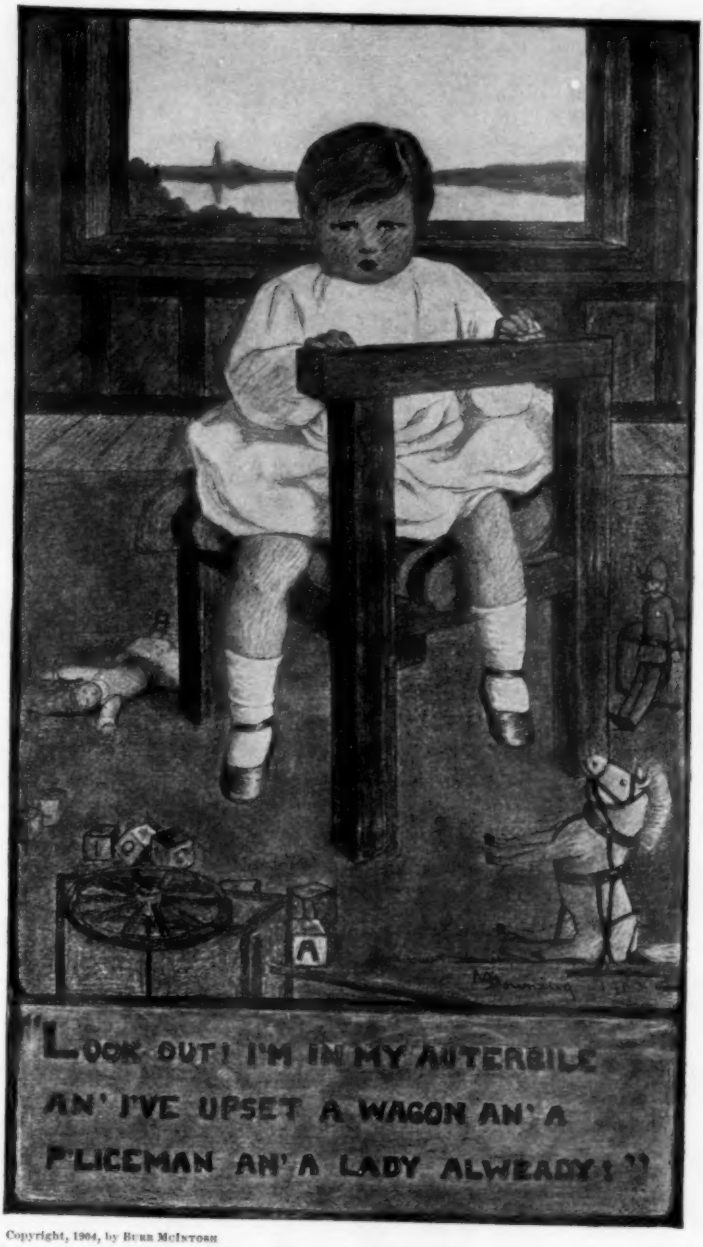
Not infrequently such an examination will show the noise results from the friction between the plates in the springs. The car body should be jacked up until the weight is taken off the springs, allowing them to open just the smallest amount possible.

When this is done a stout screwdriver should be inserted between two of the leaves, and some good motor grease spread in by means of a thin table knife. The grease should be worked down as far as possible to the center of the springs, but as it is at the ends of the leaves where most of the friction occurs one is able to apply the greatest amount of lubricant where it is most needed, and with the least amount of trouble, when the method described is adopted.

Of course it is possible to jack up the car high enough for the leaves of the spring to gape sufficiently to permit of your introducing the grease without putting the wedge between the leaves, but this procedure is to be deprecated, as it puts a strain upon the springs in a direction in which they are incapable of standing. Motor grease should always be used in preference to oils. If the thicker grease is not procurable, the thickest cylinder oil should be used.

Ever Been There?

Of all sad words of tongue or pen
I think the saddest ones are when
Your gasolene has run its course
And small boys chorus—Gittahorse.



A FUTURE SCORCHER

Her Leap-Year Prerogative

By Dorothy Hopkins

JOHN W. WRAY—"Jack" for short—a Cornell graduate and an architect by profession, though at present employed in a subordinate capacity by a firm of local builders, was nearing his home after a walk from the office. The teuf, teuf, teuf of an automobile approaching and a merry voice calling Jack! aroused him from the reverie into which he had fallen. The fashionable runabout drew up at the curb and Beth Corwine, the only occupant, with her sweetest smile, said:

"Climb in Jack and take a ride with me. We'll go to the White House grounds and view the crowd of merry children. This is 'Easter Monday,' you know, and they are sure to be there in numbers. Isn't this a perfect day?"

"Indeed it is," he answered.

"I had a letter from Nan Brewster this morning, who is visiting in northern New York State, and if you can imagine it, they are still having snowstorms, blizzards, and all such things. Look at these parks with their many-colored beds of hyacinth, crocus daffodil, and hedges of Japanese quince in full bloom, and think of Nan sleighriding, snowshoeing and curling! You are home early to-day, aren't you?"

"Yes, I found a good stopping place in my work, and thought I would rest my eyes."

"I expected to meet you, but not so near your home. So you see this was prearranged."

"But here we are," he interrupted, "I think we had better stop where we are, or we'll be hemmed in on all sides."

"Look at the crowd of kids rolling Easter eggs down hill, actually racing, each trying to get his egg first to the bottom. There is the usual crowd of darkies at the foot scrambling for and eating on the spot all eggs that break. I remember several years ago that an ambulance had to be called to convey one poor pickaninny to the hospital, for he had contracted a violent pain under his little vest from eating something like twenty hard-boiled eggs.

"There is the marine band, which reminds me that I, a Washington girl, you know, also rolled eggs down that same green slope while Sousa waved his baton and made my heart beat faster to the strains of his glorious marches. I suppose the President will come out soon and watch the children from the White House porch or terrace. This is as big a day in the minds of Washington children as either July Fourth or Christmas. Notice the different headgear, Jack, and look at the orange and lavender dress that negro girl has on. Notice the diplomats, Senators, Congressmen, and other celebrities elbowing the crowd; and yet some folks affect to believe that we are not a democratic people."

"Crowd study, Beth, has always appealed to you. Do you remember how we passed the weary hours before the procession arrived, on the reviewing stand at McKinley's first inaugural, watching the pedestrians, commenting on their costumes and guessing at their probable vocations in life?"

"Yes; do you recollect what a raw day it was?

"Look, Jack, at the many different kinds of automobiles here; it looks like an open-air exhibition. Washington is just full of them. Do you suppose any one person knows the details of all of them?"

"There are two chaps in our office who at least think they do. They spend the most of their time arguing upon the merits and disadvantages of air-cooled

and water-jacketed motors, different transmission gears and ignition methods. One has invented a mechanically-operated valve, and the other (to judge from his talk) is an authority on 'jump sparks.' But both were badly rattled one day when I asked them if either had ever ridden in a motor car. They answered, 'No,' in unison, and got busy over their drawings to hide their confusion."

"By the way, Jack, you know Sherwood Mason? He's not very well liked, has no politeness and thinks the world was made to order for him. He took Jane Sheldon automobiling and collided with a farmer's wagon near Rockville the other day, and, of course, abused the farmer roundly. But he hadn't gone a quarter of a mile farther when something broke, and he was obliged to hire the same farmer to draw them back to Rockville. On arriving there he had to pay five dollars towage, and to make it worse the old fellow said, as he pocketed the 'V,' 'Say, sonny, it wouldn't have cost yer a cent had yer had a grain of perliteness in yer make up.' Jane, diplomatically, told it about, and I hear the boys have been guying him a good deal."

"Yes, I heard of it from some source or other, but I don't know much of the fellow."

"It serves him right, Jack; that sort of a person makes it hard for the rest of us to receive common civilities on the road. But this is too fine a day to spend entirely in city riding; let's go out to the Zoo. The trip will do us good and, besides, I want to have a little talk with you."

Jack and Beth had been summering at the same resort since his first vacation from boarding school, more than ten years ago. They were in love, and yet his pride and comparative poverty, with her ample wealth, conspired to separate them. Mr. Corwine died after amassing a fortune for his widow and an only daughter to dispose of according to their own ideas. Jack's father had once been well off and had given his only son a good education, and later a year's trip abroad, before unfortunate speculation and a dishonest agent had left him but a meager living. Feeling unhappy over the small chance of securing the girl he loved without sacrificing his pride, Jack had become moody, and as time passed went less and less among his old friends.

"You have deserted us entirely of late and wear a wearied look, not in the least becoming," exclaimed Beth after a pause which neither seemed inclined to improve. "Out with it! What is on your mind, Jack? Remember the old-time comradeship, and tell me your troubles. You used to call me your 'policeman' because I was such a good listener."

"But, Beth, my condition has changed so much in the past two or three years that while my ambition to succeed in my profession is as keen or keener, if possible, than ever, my hope is gradually slipping away. Do you remember the night of the Junior Prom at Ithaca? How I painted for you in such glowing colors my future career? Then I never dreamed of the present result. Father's failure, as you know, left me entirely upon my own resources with, as the fellows say, 'a diamond appetite and a pressed-glass income.'

"A man in my profession to-day must bring himself before the public much as a patent medicine or a breakfast cereal is placed upon the market; I don't mean by just the same methods, but with about equal results. He must have prosperity in all of its details stamped all over him, belong to the leading clubs, move in the very best society and be in dignified evidence before the community in which he lives. One judges

a lawyer by his suite of rooms and the number of young men studying with him, a doctor by his vehicle and his fashionable patronage. An architect is judged by his office furnishings, plaster casts, Turkisk rugs, size of drafting room, and amount of fee charged. I have no doubt I could fill the last requirement, but have found no way to get all of the others.

"Look at Tom Evans, who now calls himself T. Smythe Evans; he was the poorest student in our whole class. He could not design a chicken-coop, much less a millionaire's residence, yet he has the best business in Pittsburg. He employs two of our old class on small salaries; they supply the brain work while he, with his acquaintances, judicious entertaining and good fellowship, made possible by his inherited bank account and assisted by his nerve, succeeds. I want money, not for the love of wealth so much as to put myself in a position where I can show by my work that I have the ability to merit a large success

"That new residence that I was telling you about yesterday is all my own design, with all the arrangements, and it hurts me to hear people credit it to the firm, outright, neither of whom could have done it without me, or some chap like me, in the background. Besides, Beth, money would mean that I could marry the girl I love, and have loved since my 'prep' school days; for with reasonable success in business I could ask her to marry me. Isn't it enough to make any fellow feel blue? Look out, Beth, I thought you were going to hit that dog. That reminds me—do you remember the fraternity mascot?"

"You mean Tuffy?"

"Yes; since a crowd of good fellows could care so much for such a horrible looking terrier, I feel that every dog, no matter how ragged and unkempt, may have someone who cares for him, and, besides, I am a sort of 'under dog' just now myself. But you handle this machine like a veteran; how you must enjoy it."

"It's the very best tonic I ever took. It is just as exciting as the spirited cob I used to drive, and much more available. The cob was always in need of a shoe when I wanted to drive, or something else was lacking. Now I can go when and where I please, and if I don't go I don't have to worry because the machine is not being exercised, as is the case with a horse. Mother has been ailing lately, and I have had to remain indoors a good deal, which depresses me; but when I get out for an automobile ride I feel all alive and forget the speed ordinance when the coast is clear, as I suppose I am doing now. Do you prefer to go slower?"

"No, this is great sport."

"I don't, either, and I think I would make a good business woman for that reason. I love to take chances, with reasonable caution, of course; and I have recently planned a coup which I believe will bring me great happiness. I suppose you will try to dissuade me, but I am going to have my own way. You and I are not growing any younger, and I can't see how you are going to progress in your work the way you ought to as long as you have to work for another."

"But Beth——"

"Now don't interrupt me until I'm through. I know the only thing that has prevented your prosposing to me is the size of your pocketbook, and it seems foolish to me when I have enough for us both and don't care for another man alive that we should put off—marriage."

"Don't you see, Beth——"

"Be still, dear, till I finish. As this is leap year—the first one in eight years—I am now going to exercise my pre-

rogative and ask you to become my husband."

"You must ask my mother's consent, Beth, failing to obtain which I will be a brother to you."

"Don't joke, Jack, this is sober earnest, and while Mrs. Grundy might be shocked at such methods, I believe for the present the 'end justifies the means.' Besides, I have enough to keep up both ends. You could never be happy supported by your wife, so, Jack dear, I will loan you enough money to meet all your requirements, and you may pay it back as your business progresses. We will be happy and contented and—please don't look so stern, Jack, and don't think me unwomanly to talk this way. And you will say, 'Yes,' won't you dear?"

* * * * * *

1904 quickly passes and we are permitted to glance into 1905 for a moment. On the top floor of one of Washington's newest and best office buildings is a door artistically lettered in gold:

JOHN W. WRAY
ARCHITECT AND BUILDER

Entering this door, the visitor steps into a large well-lighted office, furnished in the latest style and the best of taste. Handsome rugs partly conceal the highly polished floors, and casts, photos and drawings adorn the walls. In the adjoining drafting room a half-dozen men are busily working out the details of a modern 15-story apartment house, the first order received by the lucky young architect since going into business for himself.

This one piece of work will more than repay the borrowed money, and all Jack's worry has left him. He belongs to the leading clubs, and with his wife is seen in the best society. Mrs. Wray, weather permitting, "calls for and delivers" her husband punctually each day in her fashionable automobile; and one would judge that she will never repent having exercised her "leap-year prerogative."

The Underlying Reason

"I wish I had a pair of those five-league boots," the man with the billy goat beard dreamily murmured.

"What a romantic disposition," whispered Amy.

"Shucks!" we whispered back in hurried explanation. "He's a Long Island constable and he's only wishing for those boots now that the touring season is opening so he can catch the New Yorkers who venture in his bailiwick, for each of which captures he hauls down one-half the amount his side partner, the justice, fines them.

You All Know Him

"Who is the man who is to appear before the legislature in behalf of the automobilists who want all speed restrictions removed?" asked the new reporter, who had been sent to do up the commencement exercises.

"Allway Zanasse," replied the chief stringer with the wicked eye.

"Singular name," ejaculated the new reporter, busily writing it down in his notebook.

Speed Worship

By Preston Hotwell

THERE are in the minds of most human beings three great incentives to energy: There is the desire of wealth, the desire of power, and the desire of love, and every action can be traced to one or other of these mainsprings.

Nowadays some people talk of another desire, the love of speed, as a new and modern-born ambition. But is not this instinct, which is almost universal, in reality very old?

Are not speed competitions on foot or horseracing as old as the world itself? The very toddling child hates being passed by another infant. The cabman, the car driver like also to keep in front, and even the man in the street, that sometimes imaginary but always present individual, does not like being passed.

Why was the horse originally trained for the service of mankind?* If the pulling of weights at a slow speed had been the only consideration the ox would have served equally well.

The strenuous man, whatever his calling in life, is always saying, Let me get on! This feeling expresses the maybe unconscious effort of all of us to annihilate time and space. We cannot Marconi with our bodies, we must therefore be content to use a motor-car. The mysteries of thought transference have not yet been revealed, so the telegraph, the telephone must serve.

If communication with the planets were possible the etheric-telepathic office would be crowded with would-be senders of messages, for there is no victory the human race more earnestly strives for than the conquering of time and space. The battle against delay is ever being waged, and costs more victims than the campaigns of rifle and sword.

There are then, again, the three great original and innate desires, and the love of speed is really not a fourth desire but a part of the love of power—power over time and space—an influence in politics, economics, and human life generally, hardly less potent than any one of them.

There are some men who love the rowel of the spur in their backs. There are those who detest it. There are others who need it not and do the work of the world, for in the human race there are many strenuous men always combating delay, divinely possessed by the consuming, dominating, driving desire of action, of getting to the front. The nation possessing such citizens will conquer the world.

The higher the civilization of a nation, the greater the desire for speed. Take the centers in the Eastern and Western States, where intelligence is most apparent. There the very workman boasts about the train or trolley service of his town, not on the ground that it is more convenient but because it is faster than some rival town possesses. The fastest Atlantic liners are the best filled with passengers though they may be less comfortable than the slower boats.

Automobiles, therefore, are the outcome of a perfectly natural desire to move faster on the road, and the instinct of speed is not a modern development or a new desire as some writers seem to think, but one of the strongest inherited instincts in the human race. The man slow of foot, or the man who rode the slow horse in the primeval history of mankind, was caught and killed. Nowadays the slow nations are dying out, and men die not singly but in thousands; crushed by competition.

The *laudator temporis acti* is always complaining, Why this haste? But what man likes being in the ruck, whether it be the last and slowest train or the last in the struggle of humanity.

Did anyone ever yet habitually go by a slower train because it was slower?

The feeling of the twentieth century is, "Let us get our work done well—done to-day—done quickly." This use of roads for speeds higher than the horse can achieve is only the modern echo of the Roman age of good roads and fast chariots. The swift galley of those days pleased its owner, and the fast prancing pair of steeds delighted the young Roman, but neither of them pleased their owner more than the racing car and the speed launch do those who living now are blessed with opportunities for space and time annihilation which their forebears of even a generation since never dreamed of even in their most optimistic moments.

Procuring Publicity

By William J. Morgan

NO question is asked me so often in my travels among automobile makers as to how much a manufacturer can afford to spend for advertising the sale of his vehicles. There are few questions harder to answer satisfactorily than this one, since in such matters all expenses are relative. What in amount is extravagance for one maker is only reasonable economy for another. For a small manufacturer to be saddled with the expenses of a large operation would bring speedy bankruptcy. For the big maker to attempt to get along with the insignificant advertising expenditure appropriate for the small enterprise would not only be foolish, but would also work a retributive disaster. What are deemed by the big makers as reasonable and economical are larger in amount than the gross sales of many of the smaller concerns.

Whether a given expenditure is prudent or extravagant can only be determined by a careful examination into the conditions which exist. The only rule that can be laid down is to study conditions and make comparisons intelligibly. Other things being equal the larger the business the larger may be the expense account without reaching extravagant outlay. The ratio, however, is not fixed and constant. It varies at different points in expenditure for different purposes.

A small maker as a rule has a larger expenditure upon sales than the very big concerns, but this is compensated in turn by the close oversight of the proprietor and his intelligent administration of the smallest details. In this he saves much that is lost in the large concern that is dependent upon the perfunctory services of salaried employees.

What apparently is extravagance in some cases is only good advertising, and the outlay, large though it may appear

to the public, is frequently compensated by some economy in another direction. The buying public loves a liberal advertiser, and a reputation has been secured before now by what from one point of view, at least, could have been classed as extravagance. Inside the office, however, it was known that the general outlay had not been increased by this sudden display of liberality.

Appearances count for a whole lot in automobiling. Every man who buys or who sells an automobile wants the one he owns to have an atmosphere—an appearance of progress about it, and in this day and age the commercial progress of the automobile has just about reached the point where a motor vehicle maker finds it absolutely necessary to advertise. People are prone to judge a business by its advertising.

Other things being equal, the user of a page space to exploit his vehicles makes a much stronger impression on those who are not acquainted with the actual situation than does the maker who uses only half a page. This is the reason that a large space pays proportionately better than a small one. Above all things the advertisement ought to present a good appearance. One requisite of a good salesman is neatness of dress—good appearance. Did a manufacturer engage a number of slovenly-dressed salesmen to wait on his customers he would be acting no more foolish than does the advertiser who sends out ill-appearing advertising matter.

The printed advertisement is a silent salesman, and whether it appears in the form of a circular, booklet, catalogue or newspaper advertisement, it ought to reflect the concern responsible for its appearance. People judge a business by the appearance of its advertising, and advertising that presents a poor appearance induces a poor opinion of the advertiser, the automobile advertised. The best way to convince the public that an article possesses merit is to put merit in the advertising.

Automobile advertisers need instruction about more things than circulation of mediums and how to get the "rock bottom rates." One of the most important things for them to know is how to turn inquiries and the "rough materials" obtained through advertising into actual results. Buying space in the right mediums at the right price is the easiest part of advertising. It requires cleverness, genius and a good knowledge of human nature to harvest the returns after the proper seed is sown in the proper soil. This is where most advertisers are weak.

The trouble with many of the publicity promotors is that lots of advertisers appear to have an invincible horror of a simple, natural, every-day style of talk. Macauley said of Dr. Johnson that when he spoke he clothed his wit and sense in simple, natural language; but he wrote a language that nobody ever hears from his mother or his nurse; a language in which no one quarrels, drives bargains or makes love. If a salesman, in talking to a man who was going to buy an automobile, copied the diction of a large portion of the advertisements of the motor vehicle, he would be considered a fair candidate for Bloomingdale. If the advertisers got it into their heads that the same style which influences the human mind in other directions is the best style for selling automobiles, the average of advertisements, in point of clearness and force, would be materially raised, and believe me, I am no carping critic when I say the average sadly needs elevation.

In starting in a business like the building and selling of automobiles the advertiser must not lose sight of the fact that he is not the only one in business. If an advertiser had no competi-

tion whatever, perhaps it would not make so much difference whether his advertisements presented a good appearance or not, but where one has a dozen or two competitors to contend with, it is essential that his advertisements present as good an appearance as possible. This point can be admirably illustrated by supposing the following case:

A man finds himself in need of, let us say, a lifting jack. Not knowing just what he wants, he writes to two firms requesting literature on the subject. In due time two booklets come. Both are convincingly written—both contain testimonials, and the only point of difference is in the appearance of the two booklets. One is neatly printed on good paper and presents an excellent appearance. The other is a cheap affair—poorly printed on poor paper. Which firm do you thing will land the order? It's self-evident. In nine cases out of ten the firm that sends out poor advertising literature loses a sale, not because its jack will not compare favorably with that made by rival firms, but because rival firms send out a better quality of advertising literature.

When a man desides to purchase an automobile, not infrequently it's the case that the appearance of the advertising determines his selection. If the vehicle is all right, he becomes a regular user of it; if not, he tries somewhere else. But here's the point—the vehicle that presents the best appearance gets the first trial.

Summed up, advertising extravagance may be defined as including all unnecessary and unwise expenditures supposed to be for the purpose of obtaining increased publicity and sales. Whoever pays more for an article than it is worth to him makes an extravagant outlay. Whoever pays no more than what an article of service is really worth, no matter how high the price, makes only a reasonable investment. Nothing but a study of details and an analytical comparison of results with their cost, will determine what is economical and what is extravagant in anything, advertising included.

Advance Ignition Slowly

By R. E. M.

THE more haste the less speed; remember this, and when you deem it necessary to advance ignition, do so very slowly, taking the lever along, notch by notch, with several seconds' interval between each advancement. If you proceed in this fashion it gives the engine every opportunity to pick up its speed gradually and without any shock to its component parts.

Supposing the ignition to be half advanced and the engine running easily, if it be fully advanced suddenly there is every probability that the cylinder charge will be fired long before the piston has got anywhere near the top of its stroke. The consequence is that while the velocity of the flywheel is lifting the piston the early ignited charge tends to force it down, resulting in a very severe shock to the whole of the engine, the piston, connecting rod and crank shaft in particular.

Opening or closing the throttle valve suddenly does not produce the same effect as advancing the ignition; but if the quantity or quality of the charge be suddenly increased there will be, of course, a corresponding increase in power, which will result in a heavy thrust upon the bearings, etc., until the engine has picked up its speed. It is advisable, therefore, to regulate the throttle lever gently, also.

Variation in Gas-Engine Horse Power

By E. W. Roberts

ONE of the most puzzling things to the uninitiated is why a gasolene engine of a certain size, for example a 4-inch by 5-inch single cylinder, will be claimed to be 4 H. P. by one maker, while another maker of the same sized engine will claim six or even as high as 8 H. P. What is more, both engines will probably show in a test very close to what the makers claim for them. It may be that the engine is well designed and constructed, and if such be the case it is merely a question of speed. Quite frequently, however, the design of the engine has a great deal to do with the affair, and it is the purpose of this article to point out wherein the majority of designers make mistakes particularly in the proportioning of the engine.

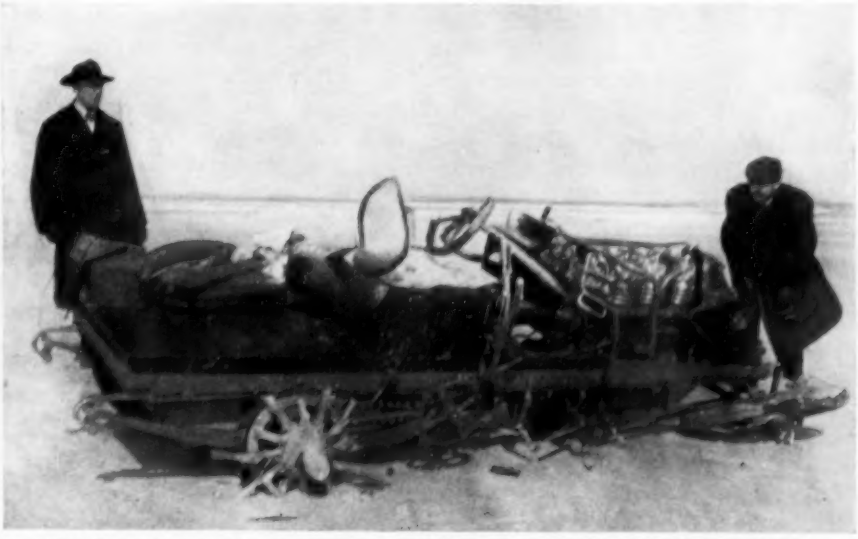
To begin with, anyone can understand that the more mixture you get into an engine the more powerful will be the explosion and the greater the amount of work derived from one impulse. The designer should not lose sight of the fact that the air which forms the principal part of the mixture is not pulled into the cylinder, but it is driven in there by atmospheric pressure which at ordinary altitudes is from 14 to 15 pounds per square inch. It should always be borne in mind that constricted passages check the entrance of the current of air just in the same way as a stream of water may be cut down by partially closing the valve through which it flows. The less pressure there is behind the fluid to drive it through the orifice the more any partial closing of that orifice will check its flow.

It is a well established rule among gas-engine designers that the speed of the air current when drawn in by the piston during the suction stroke should not exceed an average of 100 feet per second. If this speed is exceeded the cylinder will not receive a full charge. The inlet valve should invariably be so proportioned to the diameter of the cylinder and the speed of the piston that the air current must at no time exceed this maximum, and in designing a valve it should always be given a lift of at least one-quarter its diameter. Do not think, because the area of the valve opening is in accordance with this rule, that so long as it opens one-sixteenth or so it will allow the air to pass freely. If there is any feature of the design that will not permit the valve to have the required lift, the opening should be increased so that the circumference of the opening multiplied by the lift is equal to that called for by the limitation of 100 feet per second. But the inlet valve is not the only point that should have attention, for care should be taken to keep the passages of ample size throughout, not to constrict them, and to avoid sharp bends wherever possible.

This brings the discussion to the vaporizer. There are on the market today quite a number of vaporizers (so-called "carbureters"), good, bad, indifferent. And I must say that there are too few of them in the first class, that is, the good ones. I do not believe that there are a half dozen first class vaporizers being manufactured to-day. The principal trouble with the majority of them is that they choke the air passages to an unwarranted extent. There is only one point in the vaporizer where a choke is permissible, and that is immediately around the gasolene nozzle, and in the majority of vaporizers the choke is too great at this point. Quite a number have a long constricted passage which, if widened at every point except imme-

diately around the nozzle, will show a big jump upward in the power of the engine.

Again, a great many vaporizers are designed in such a way that the fuel regulation must be controlled by the operator. There are very few in which there is a device for keeping the mixture constant at all speeds of the engine. The ideal vaporizer, and there is such an one, will, when once adjusted for a certain quality of fuel, require no change in adjustment. The fact that an engine will *run* on a certain kind of a vaporizer is by no means a recommendation. A vaporizer should be so designed and constructed that the minute the throttle is opened, the speed of the engine picks up. It should take but two or three seconds for an engine which is running without load to come from its slowest to its highest speed when the throttle is thrown wide open and the response to the throttle should be immediate, either when speeding up, or when slowing down with lead.



WHAT REMAINED OF A RACING CAR AFTER AN UPSET ON ORMOND BEACH

In regard to the setting of the inlet valve it should be made to open at the beginning of the stroke or a very small fraction of an inch thereafter. It should be closed, not at the end of the stroke, but after the piston starts on the compression stroke and at such a point that when the engine is running at the slowest speed there is no back draft through the vaporizer. Note carefully that this point is not wholly a question of degrees on the crank circle, but the blowing back point should be determined. But for one particular size and style of engine the point on the crank circle at which the valves should close will be the same. This adjustment is important in order to get the cylinder as full as possible of fresh mixture and to obtain the maximum power in consequence.

The reason that the air will not blow back after a certain portion of the compression stroke has been covered is this: The cylinder is never quite full at the end of the compression stroke and the ingoing air has a certain inertia which must be overcome before it can be forced on an outward path. It will surprise

a great many of the readers of this article if they will widen the face of the inlet cam in the direction of its rotation how much added power will be obtained from the engine. It appears in a great measure to be the lack of attention to the above points that makes so many engines fall short of the maximum power which they really should give.

The subject of ignition is one which has been argued pro and con and with gradually increasing vigor ever since the advent of the explosive engine. Nearly every gas-engine designer understands that for the best results ignition must take place in the cylinder in advance of the end of the compression stroke, but few know why this is true. What takes place is briefly as follows: Taking electrical ignition as the best example, when the electric spark is produced within the mixture that portion of the mixture immediately surrounding the spark is fired at once.

The small flame, comprising the first portion ignited, ignites the gas surrounding it and that in turn another layer of gas surrounding that. In fact the progress of the flame is spheroidal, that is, extending from a center which is the point at which the spark is produced. The advance of the flame is with increasing rapidly throughout the mixture on account of the increasing surface of ignited gas which is being presented. When every particle of the mixture has been set on fire the pressure has risen to its maximum and the lapse of time between the production of the spark and the ignition of the last particle in the mixture is said to be the period of inflammation. Whenever the proportion of the fuel and air, the compression pressure and the temperature is the same the period of inflammation will be the same. If the mixture is not homogeneous throughout it can be readily seen that the speed at which the flame is propagated will vary with the proportion of fuel in the mixture.

By some it is claimed that a certain mixture of burned gas from the previous charge makes the inflammation sluggish and while this has not been proven to my satisfaction I must admit I believe there is excellent cause for thinking that this does act in this way. It will also be seen that, theoretically, the nearer the center of the mixture a spark can be produced the shorter will be the period of inflammation. There are some practical considerations which appear to interfere with this and especially the state of the mixture immediately around the spark point. Generally the inflammation is much more rapid with a rich mixture, with a high temperature, and with a high compression.

In all cases the aim of designer and the operator is to so ignite the charge that the maximum pressure will take place just at the beginning of the expansion stroke. In a low speed engine the igniter can be set readily by means of an indicator diagram, but the limit of the ordinary indicator is reached between 600 and 800 r. p. m., and the best way to set the indicator for a high speed engine is by the use of the prony brake, adjusting it carefully until with a constant speed the engine pulls the largest load. Under the same conditions the period of inflammation is constant and in order to secure the maximum pressure at the beginning of the expansion stroke, it is necessary to advance the igniter, firing it farther and farther down the stroke as the speed of the engine is checked.

Since the adjustment of the igniter for best results is made a delicate operation by the constantly varying speed of the engine which occurs in average running, it is impractical for the operator to keep the igniter at the best pos-

sible point at all times. For this reason an up-to-date automobile engine operates with the spark advance under the control of a governor so that no matter what the speed of the engine or how fluctuating this speed may be, the point of ignition is always right. The governor for this purpose must be so designed that the angular advance of the igniter is in proportion to the speed.

With the compensating vaporizer already referred to, and the governor controlled igniter two operating levers are removed to the advantage of the engine and the relief of the chauffeur. Personally I know of at least one car on the market to-day which has both of these features and he would recommend it to the careful consideration of the designer.

Just as careful attention to the exhaust value and the exhaust passages is required in gas engine design as with the inlet passages. Usually, gas engine designers base the proportions of the exhaust valve opening on what the speed of the gas would be when they are driven from the cylinder at atmospheric pressure and as a basis for proportion take the limit of speed on the above supposition at 80 feet per second. As with the inlet, the exhaust passages should not be constricted and sharp bends and turns should be avoided whenever possible.

The muffler should not be made with constricted passages, but the principle to be employed in muffler design should be, first, expanding the gases into a chamber with a volume of about five times that of the piston displacement and finally breaking the column of gases into a number of very small streams so that the area of the outlet will be equal to at least the area of the exhaust pipe. The writer believes that better results can be obtained by making the combined areas of these holes from one-and-one-half to twice the area of the exhaust pipe.

If a quiet muffler is desired make as big a one as space will permit and so design your muffler that it can readily be taken apart to be cleaned. There is not an engine or muffler so designed that it will not at some time or other be clogged up. So it is for this reason more than any other that I am a believer in an auxiliary outlet for the escape of the exhaust without passing it through the muffler. Clogging the muffler will invariably throw back pressure upon the engine and reduce its power. Some designers think that because a new muffler does not cut down the power of an engine that the muffler cutout is unnecessary. Let these fellows go on a tour with a dirty muffler and they will mighty soon wish for a muffler cutout.

In order to get the maximum power out of a gas engine it is necessary that the charge of fuel and air be compressed before it is ignited. The fact is that the compression itself raises the temperature of the mixture and that when raised to a certain temperature the fuel will ignite without the use of a spark or flame, limits the amount of compression that may be used. So long as the temperature produced by compression does not reach the point at which it would ignite the charge before the proper time for the igniter to act, it is not too high. It should be noted that the pressure of compression rises as the piston proceeds on the compression stroke and therefore the ignition due to compression will take place at a certain point in the stroke irrespective of speed. Hence since the igniter must be advanced as the speed increases; the higher the speed, the greater the compression that can be used without detriment to the working of engine. The higher the compression within the limits

just outlined the greater will be the power of the engine and the greater its economy of fuel. For a gasolene automobile engine the limit of compression varies according to the speed from 80 pounds to 110 pounds per square inch. One American builder claims to use even so high a compression pressure as 120 pounds.

In order to figure the proper compression it is absolutely necessary that there be no leakage of the mixture past the piston, therefore one of the prime requisites in gas engine construction is to get a smooth and perfectly cylindrical piston and cylinder bore as well as practically perfectly fitting rings. Leakage past the piston results in loss of power, loss of compression and loss of a portion of the charge.

There are quite a number of minor points pertaining to design and construction of gas engines, but many of them are such as any good machinist, designer, or constructor should know. I regret to say many of the points I have touched upon here are often misunderstood by gas engine designers, apparently without any effort being made to avoid doing so.

Are High-Speed Motors Justified?

By F. M. R.

IT is now very generally admitted that the power of an internal combustion motor depends on the stroke, the bore, the compression, and the number of turns per minute, but the rule does not hold good for the latter factor after a certain speed.

One great evil of high-speed motors is the rapid deterioration of parts such as valves and springs. Of course, there is a remedy for this—the carrying of a large number of spare parts. Nowadays motors are expected to run at anything up to 2,400 revolutions per minute.

The question is, how much gas can be drawn in by the piston in one twelve-hundredth of fifteen seconds, for in a minute fifteen seconds only are available for drawing in the charge. In this limited period the aspiration must be partial, and the degree of compression falls.

This dimunition is helped on by the fact that the gases are forced back into the carbureter before the inlet valve can close. Not only is the aspiration incomplete, but the combustion also, a part only of the charge having time to explode.

Experience shows that the rate of flame propagation in a mixture such as is usually obtained, compressed to six and three-quarters pounds, although theoretically it should exceed this. In the type of motor under discussion the piston speed is from 22 to 26 feet per second, so that all the energy of the charge can never be utilized.

In fact, the rate of increase of power with regard to the increase of speed after 1,700 revolutions per minute falls from 80 to 50 per cent., and at 2,400 revolutions per minute is only 10 per cent. The least partial failure of the ignition causes the rate of combustion of the gases to fall rapidly to 4 or 5 meters per second, and the motor then acts as a brake. As a matter of fact very few of these fantastic motors can run up to these high speeds unless unloaded.

I think the public will soon get tired of these absurdities, and will return to the medium-speed motor, which is more economical. I admit these weigh more, but even so, too much has been sacrificed in these latter days to save weight, to make it a factor in a matter like this.

The Grand Vizier's Stratagem

By Kenneth Frazer Lockwood

THE Sultan was bored, which was quite unusual, for the great man had a way peculiarly his own of creating excitement. "Don't you know, Ham," said he to his Grand Vizier, "at times I suffer terribly from ennui."

When Ham had ceased trembling—which he did whenever his master spoke—he struck nearer the truth than he imagined.

"Perhaps, your excellency," he said, "you had better not eat so much hereafter."

"So much what?" demanded the Sultan.

"Why—why—so—much—so much—er—ennui. I have heard it is not good."

"Hamanegs," said the Sultan, very slowly, "are you poking fun at me again?"

"Your Royalness! Nay, I swear. Why—why——"

"That will do, then. Your education has been sadly neglected. I also have observed it in the way you speak our tongue. For instance, I have heard you say 'I shall see' when you really meant 'I will see.' Don't you know no better than that? You shouldn't say them things."

Hamanegs was very humble.

"Y-yes, Great One," he said.

"No! I said no!" stormed the Sultan.

"Y-y-yes—that is, no."

Such exhibitions of stupidity always angered his excellency.

"Stand on your head, sir," he shrieked.

"Your Grea——" stammered the poor Vizier.

"Stand on your head!"

"But——"

"No 'buts.' I said stand on your head. Do you want to lose it?"

"N-n-no, Gracious One, I do not."

"Then stand on it. Quick, sir!"

Hamanegs was bound to have his say.

"It is impossible, Greatness," he blurted out.

The astonishment of the Sultan was so great that he staggered.

"You see, O Luminance, one cannot stand on one's own head—at least an every day person can't. A contortionist might, you know."

The Sultan's face expressed withering contempt.

"You think you're funny, don't you?" he asked.

"Not at all, Excellency. I am simply stating a fact."

"I can disprove it—with the help of our chief executioner, Cutamoff."

Hamanegs shivered.

"You have pronounced your own doom," continued the Sultan. "O, no"—as the poor fellow groveled on the floor—"I'm not going to do you. More fun than that. Now mark me well. If by night you have not learned to stand on your head you'll be without one. Do you understand?"

"Yes, Most Gracious Master. Gladly will I do it to give you pleasure. Surely the most stupid fellow can learn in a whole day."

"Well, you're about the most. If you

don't, pop goes the wezel. Now let's take an auto ride."

Long experience had taught Hamanegs the futility of kicking. Therefore he had accepted the situation as cheerfully as he knew how. But the Sultan's last words had suggested a way out which tickled him immensely.

Nothing held quite so substantial a place in the Sultan's heart as his automobile—perhaps because it was the one thing he could not manage. Three lessons, gone through with hair breadth escapes from injury to life and limb, had taught him little.

In Hamanegs he had an able teacher. What the Grand Vizier didn't know about automobile and automobile running might have been put under the Sultan's turban. He could go at a stone wall with a speed of a mile a minute and stop within a foot of it; he could turn a complete circle within the machine's length; he could climb up the steepest flight of steps—he could do all the other impossible things about which we read and hear so much. But he simply couldn't—or wouldn't—teach the Sultan properly to run it. And the Sultan after each effort gritted his teeth and swore by the beard of Mohammed that he would run it.

And thus it was that when they had left the city and were spinning along the smooth country road the Sultan must take control. Hamanegs expostulated calmly and firmly, showing evidences of his master's incapability in his steering of the previous day and in the wild manner in which he had turned corners and scattered death and desolation along the road. But his excellency was obdurate.

"Look here," said he, "do you mean to say that I, the greatest bug in the Turkish rug, can't do what a mere ha'penny, second hand vizier can do? Do you want to insult me?"

The Grand Vizier assured him that he didn't, that he was merely looking after his master's safety; but in the end the Sultan had his way.

When the machine safely had climbed the hill of Hashan Salade and had commenced its journey down the steep slope on the other side the first real danger confronted the two. Half way to the bottom the descent swerved sharply to the left, thus hiding the entire lower half of the road. A suggestion from the Vizier that he take charge of the vehicle met with severe scorn. Immediately his plan went up in air. He saw the searching party gather his bones and try to straighten them out. With a half finished prayer on his lips they reached the curve; he closed his eyes; the auto tilted to an angle of eighty degrees and then—they were speeding along the straight road right toward a donkey and a cart which stood in their path.

The Sultan's nerve, which had really suffered at the curve, collapsed.

"Ham, Ham!" he shrieked. "For mercy's sake, take hold here! Quick—qui——"

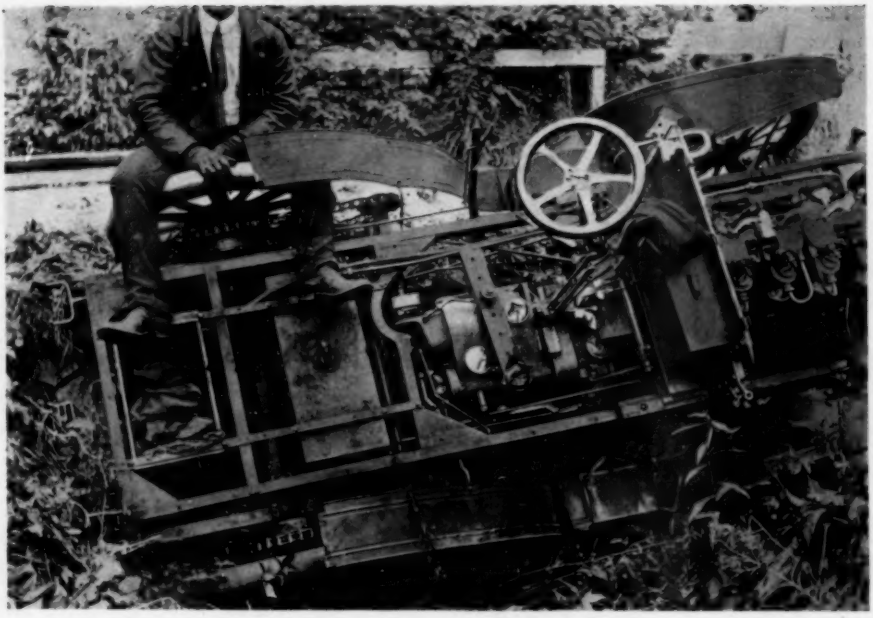
But the G. V. saw that it was too late. There was nothing to do but to sit still and hold on.

Crash! Bang! Whizz!

A great wheel flew past the Sultan's head and a spoke narrowly missed the Grand Vizier. The air in the vicinity of the automobile was filled with splinters, dirt, pebbles, spokes—and cuss-words. The jackass landed in a nearby thorn bush and stuck there furiously braying.

But through the chaos went the flying machine and without lessening the speed Ham tested the machinery. It worked like a charm.

The Sultan sat up and felt himself all over. Then he straightened his turban and looked at Ham. The latter's face



WHILE HE WAITS FOR HELP TO COME

wore a well feigned expression of awful fear.

"What's the matter with you?" asked the Sultan. "I've had enough. Come on, stop the darn thing. I want to go back."

Ham tugged and strained.

"Do you hear me?"

Another tug—with no results.

"Stop, I say," cried the master.

"O, Great and Glorious Sovereign, I—I——"

"Stop, I tell you."

The Grand Vizier sobbed painfully.

"O! O! O! I—I—we——"

"You bawling idiot, stop!"

"Yes, Your Excellency—I mean—I mean we can't. O! O! I can't."

"Can't!" The Sultan was thoroughly frightened. "Can't! Can't we keep on till it gets tired?"

Ham shook his head.

"The steering's broken, Excellency—and look! O, we are doomed—we are doomed!"

The Sultan looked and his heart forgot to beat. Not more than ten or twelve miles away, in full view, was a bend in the road beside an awful precipice. Abject fear sat on the ruler's face; his hair stood on end and he lay limp and helpless upon the seat.

The Grand Vizier wriggled in agony—but kept his hand on the wheel. Tears coursed down his dirty face and ran races to his chin. He groaned and tore his hair—which was a wig—and gnashed his teeth in a frenzy of helplessness.

"O, dearly beloved Master," he moaned, "to think, just to think that it is I, your loving servant, who have brought you to this terrible death. See! Look! Those jagged rocks below, how they rise like angry storm clouds upon the horizon! See how they beckon to us and stretch out their hands! It drives me mad! My brain is on fire! My blood has turned to water! It freezes at the thought! Down, down, down we'll go like specks of dust in the air

until we strike those points below. And the crawfish will feed on our bones, and the vulture will hover around us, and the starving wolves will take their portion and munch it in the darkness of their mountain caves. Our blood spreads before me eyes and dyes the rocks around. And I have brought you to this. O, Master, before we go to that horrible death say that you forgive, so that I may hope to meet you in the vast unknown. Ah! I know you will, for I see the light of a glorious martyrdom in your eyes. For you they will build a tomb whose minarets touch the very skies, and people from all ends of the earth will gather around it and lay kisses and wreaths of flowers upon it. But for me there will be nothing; not even a little slab—slab—will rise for me in the resting place of my ancestors. My portion, my fate, is to be forgotten—yours, your name will be always remembered, and men will talk of you and of your horrible death for ages to come."

"O, Ham," groaned the Sultan, "couldn't we jump?"

"O, no, no, no," wailed the Vizier, "not that! Disfigured and twisted we might linger on for months only to die in worse agony."

With clenched fists the Sultan beat the leather seat.

"O, Mohammed—Mohammed," he shrieked. "Save us, save us!"

"Ah, Your Excellency, you are right," cried the Grand Vizier. "I see it all now. To young men are given ability to jump, and leap, and run, for these things befit them, but to their elders—old men like myself—lives of ease are given. Ah! I see it all—I see it all, now. This is my punishment—to bear upon my shoulders the eternal curse of your death because I stepped across the line Mohammed in his wisdom drew 'twixt young and old. O, would that I had never said those words! Who am I that I would defy Mohammed and stand upon my old and feeble head!"

The Sultan lay upon the floor, his arms resting on the seat, his face buried in his arms.

"Ah, faithful Hamanegs," he groaned, "dost really think so?"

"Aye, I do—I do—I know it. O, dear master, whose reign on earth is so soon to end, whose death——"

The Sultan fairly screamed.

"Stop, Ham! As you love me, stop. Do you want to drive me mad? If what you say is so the fault is mine—not yours. I commanded, for mine is to command, you did but obey me. Mine is the wrongdoing—you are guiltless. But, O, Ham, dear Ham, think of it—think of it! It is too horrible—too horrible."

The bend in the road was close at hand. The Grand Vizier's face was white and set. But he did not hesitate. It was death one way or another.

"We are almost there," he said—calmly this time. "Goodbye, my sovereign. My heart is easy, for you have forgiven me. Dear Master, goodbye."

The Sultan raised a stricken face and looked at his servant.

"O, Hamanegs," he whispered, "faithful servant and true friend, sorry am I that I spoke those cruel words to you to-day. I was wrong, vilely wrong, and as Allah is my witness I am sorry. Ah! if we could only start over again how different it would be. I know your sterling worth now, and my heart is sore that I have not seen it before. I was blind, I suppose, but it is all over. We part, Ham, not as master and servant, but as brothers. Goodbye, dear friend, and forgive me."

Then the Grand Vizier's hand (unperceived by the Sultan, who had again buried his face in his arms) stole quickly forth and settled with a grip of iron; a mighty tremor shook the flying auto-

mobile; its occupants were violently thrown forward, the Sultan on top.

The automobile had stopped on the very brink of the awful chasm.

For fully ten minutes the monarch wept tears of joy. Then he looked around for his faithful Grand Vizier. He saw him kneeling as if in prayer. But this he did not see: the eye which Hamanegs was winking at a glorious patch of red cloud, all that was left off a beautiful sunset. For the Grand Vizier's stratagem had succeeded beyond anything he could have hoped for.

When Pumps Weaken

By "The Tourist"

FEW things are more annoying or more difficult for the owner to deal with than a water circulating pump which persistently leaks. Such a pump is almost hopeless, because the defect can usually be traced to faulty designing, because the bearings are not long enough. When this is the case, the pump being rotated by chain or frictional contact with the flywheel of the engine has the driving pressure applied at one point, thus causing the pump spindle to bear against opposite ends of the bearing.

Now, the shorter such a bearing is the greater the wear will be, and so soon as this reaches an appreciable amount a permanent leakage will set in. This can only be cured by rebushing or lining the bearing, an expensive job, which would have to be repeated at very short intervals. The moral is, "If you have an inefficient pump get rid of it at once."

Instead of a long plain bearing, many pumps are fitted with a stuffing box and gland. Asbestos, tow or other material is packed into the stuffing box and the gland is tightened up to make a water-tight joint around the revolving spindle. The stuffing box is the cylindrical chamber formed upon the body or cover of the pump. It is bored out considerably larger at its outer end than the diameter of the spindle, and is provided with an internal screw thread. The gland is simply a long sleeve fitting over the pump spindle. It is screwed to fit into the stuffing box, and is provided with a hexagonal head so that it may be tightened up with a wrench.

Even the best of pumps will leak in time through the bearing becoming worn. When this occurs the best packing to use is one composed of alternate rings of rubber and hard fiber, which should be a good fit over the spindle. If the pump runs at too high a speed for the rubber rings to stand up to, then alternate the fiber rings—which should be at least one-eighth of an inch thick—with asbestos cord.

"Imagination," said Napoleon, "rules the world." And he never saw the prospectus of a new automobile company, at that.

Automobiling—on the Water

By Robert Bruce

REFERRING in a casual way, a few months ago, to the growing popularity of the motor-driven boat, a contributor to the AUTOMOBILE MAGAZINE made the assertion that it appeared to be "one in final destiny with the automobile." No doubt this seemed at the time a somewhat ambitious view of the matter, a strained, foolish sort of prophecy. There is no longer any hesitation about making or accepting such sentiments, however, and those whose interests are bound up in the broad-gauged movement which embraces the two kindred means of pleasure travel and commercial transportation have come to look upon them as allies of the most valuable kind.

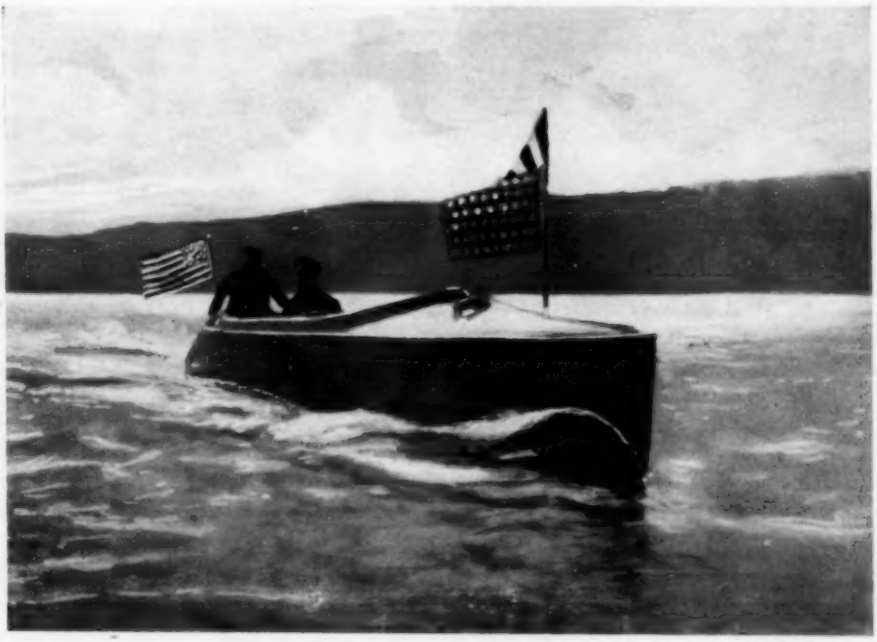
The primacy of the automobile in this association is nevertheless plain and undisputed. It must always interest the larger number of people, especially in a country the bulk of whose population is in the interior, even as the roadways outnumber the waterways, and the highway and the rail carry more commerce than the coastal and inland waters. The marine gasolene engine is simply the complement or other self of the road motor; together they back up a two-winged movement to which much the same principles of propulsion apply. Both have the advantage of private ownership, the charm of speed at will, the succession of ever-changing scene in the exploration of new territory, and a future alike recreative and utilitarian. There is scarcely anything to compare either with but the other; both are strictly modern developments, worked out to suit the special needs of the times. And each has a conspicuous part to play in the practical affairs of life.

Signs of growing interest in the marine side of automobiling have been abundant at all the motor vehicle shows of the past winter, both in this country and in Europe. Even at the Paris Salon the display of water craft and their accessories—grown in two years from an incident to a leading feature—received a great deal of attention and drew a special crowd of admirers and experts. The lack of enough room at the last National Automobile Show in New York afforded no opportunity for the adequate display of this division—though equipments were there in plenty; and the same was fairly true of Chicago and other cities. This deficiency was compensated in large measure by the added room given to the motor-driven craft at the various sportsmen's shows East and West, and by the Herald Square Show.

These affairs were not only notable for being the first of their kind, but they were deliberate exploitations of the new-style craft that must soon be darting like dragon flies about the waters of our bays, lakes and rivers. Now for the first time, too, the grand sport of yachting, independent of sails and the wind, bids fair to be brought within the average means of the great middle class of sport loving Americans. These displays have been comprehensive, including complete boats, separate engines and equipments—everything in fact connected in any way with power-driven craft. Each was a decided revelation to the visiting crowds of the popular interest in and the great possibilities ahead of the new aquatic sport, both racing and cruising.

The time of the exhibitions was well planned for inquirers who wanted to study the situation leisurely and find out in midwinter what they preferred to order, accepting deliveries in the spring

for use in the summer months. So great was the enthusiasm manifested that only Madison Square Garden may be able to adequately house future shows of this kind. In less than a month, too, Boston had her first motor boat show at Horticultural Hall in that city. All of the prominent builders saw clearly as early as the first of March that they would have to make large preparations to take care of the business that would come to them even in 1904. This, together with the destruction of so many small boats by the storms of last summer—most of which are now being replaced—should keep all the established manufacturers fully occupied for months to come.



Between the sportsmen's shows and the special exhibition already referred to, practically all of the individuals and firms now represented in the commercial development of the motor boat in America had a chance to display their products. Here as elsewhere the predominant automobile influence is shown by a similarity of names. Smith & Mabley, New York—to whose initiative and enterprise much of the quick popularity of the motor-driven launch is due—showed the Vingt-et-Un, fresh from speedmaking laurels on the Hudson, where some of the best records have been attained, notably by the Elide, the torpedo boat Bailey, the Vamoose, and the Arrow, all much larger and more powerful craft.

This S. & M. line includes launches built for speed, yacht tenders, pleasure and touring boats, each designed for maximum efficiency in its particular sphere. The speed attainable is from 18 miles per hour upwards, according to specifications and requirements. Compactness of driving mechanism is a special feature, as is proven by the fact that the 21 H. P. motor takes up only 13 cubic feet of space, with a total length of 32½ inches, height 29½ inches, and

width 23 inches. For comparison it may be stated that this same size and weight of the best regular marine motor would go only about 8 miles per hour and develop perhaps 10 H. P.

Hollander & Tangeman, New York, representatives in America for the F. I. A. T. automobiles and motor boats, kept that wonderfully popular Italian line well to the front, with perhaps a wider range of powers offered than any other makers yet show. The match race arranged for next summer between the Vingt-et-Un and the F. I. A. T. is already looked forward to with much interest, the design for the Gold Automobile Challenge Trophy offered for that event being on exhibition at the New York Sportsmen's Show. This event will probably take place at Larchmont, on Long Island Sound, sometime in June. Hollander & Tangeman are willing to back up the Italian motors at any time or place, and will race any other firm on condition that the boats shall be built and manned exactly alike.

The F. A. La Roche Co., New York, controlling the American business of A. Darracq et Cie., France, are already fitting that firm's famous motors to boat forms, a 32-foot racing hull being now under construction by the Herreshoff establishment for the personal use this summer of Mr. La Roche. The engines of the E. R. Thomas Motor Co., Buffalo, N. Y., are also being made for water craft as well as for automobiles and motorcycles. The Lozier Motor Co., Plattsburg, N. Y., and New York city; the Electric Launch Co., Bayonne, N. J.; the Truscott Boat Mfg. Co., St. Joseph, Mich.; the Standard Motor Construction Co., Jersey City, N. J.; the Gas Engine & Power Company, and Charles L. Seabury & Co., Morris Heights-on-the-Harlem, are also among those busily engaged on various motor-driven craft for racing and cruising, with new plans under way by less well known designers and builders.

How rapidly the motor-boat business is developing in this country will become more apparent between now and midsummer, by which time some pet representative of each establishment will be out on the water to prove its worth and try out the idea of its designer. Smith & Mabley have already made an entry for the Harmsworth Cup race in England this year—the only American entry up to this writing. Competitions on this side of the Atlantic are already being announced by the American Power Boat Association, one on Memorial Day to be held in Manhasset Bay, Long Island, entries for which will be kept open until 6 P. M., May 29.

The first annual Challenge Cup races for the championship of America have been arranged for June 23, 24 and 25, the course to be in the Hudson River, extending from a point off the Columbia Yacht Club house, Eighty-sixth street, Manhattan, to and around a stake-boat anchored up the river not more than twenty miles above the starting point and return. Entries close with the chairman of the cup committee, Anson B. Cole, 63 Wall street, New York, on June 13. This competition is open to power boats of all kinds that comply with the following provision:

ARTICLE II.—Matches for the cup shall be limited to boats propelled by power only, and whose rating under the rules of the American Power-Boat Association in force at the time of the challenge shall be not less than thirty-five (35) feet, and whose waterline length shall be not less than twenty-five (25) feet, but in no case shall the rating be less than the waterline length.

French engineering skill first turned the features common to the racing automobile into use for propelling the long, slim body of the automobile launch through the water. The machinery and the methods of transmitting power are the same as in the high-speed motor vehicle, the fuel, motive power and the manipulating devices being practically

identical. The only actual differences are that the motive power, instead of being carried on wheels, is incased in a smooth canoe frame offering a minimum of resistance to the water, and that the mechanism steers by a rudder instead of by devices operating on the front axle.

In all other essential respects the automobile launch and the road motor are virtually the same. A competent person can handle either type, and it would be perfectly feasible to build the running mechanism of a motor vehicle very largely out of the machine parts belonging to a motor launch, and vice versa—so closely identified are these apparently dissimilar means of travel. Men who have found pleasure and profit in automobile racing and touring say of automobile boating that it is certain to become immensely popular with yachtsmen as well as with automobilists.

That the competitions already arranged will lead to a larger all around use of power boats in this country is undoubted. There are few places in the world that are so advantageously situated as New York city for the running of a system of suburban transportation by water, and yet we venture to think there is no municipality where these natural advantages have been so little used in the past. Time has been and is

so large a factor in local transportation that rail-using vehicles driven by steam and electricity have had a virtual monopoly of this business. It is true that there has been some talk recently of running a line of high-speed passenger steamers between the metropolis and suburban towns on the lower Hudson River, capable of making 30 knots per hour, and thus competing with the railroads; but the scheme seems to be in abeyance, even if it has not altogether fallen through. Practically the only travel of this kind that is now done is done is due to the owners of private yachts, many of whom make the journey every summer day by water between their residences on the Hudson and along the Sound and New York city. The convenience and pleasure of this method of travel are obvious, but it needs the impetus which only the medium-priced power boat can provide to bring it within the means of a larger number.

It has just been officially announced in Berlin that a new and important feature of the annual regatta week at Kiel, which begins on June 22, will be a series of races for motor boats, including all modern types of steam, hydrocarbon and alcohol motor launches and yachts. These craft will be divided for the competitions, according to their motive power and tonnage, into three classes or categories, with prizes in each class and a valuable trophy to be given by that eminent patron of watermanship, the German Emperor, to the winner of the principal event.

The conditions of admission and the rules governing the several contests are now in preparation by the German National Automobile Club, whose headquarters are at 4a Sommer Strasse, Berlin. The enterprise is inspired and directed by the German Emperor, who has ordered for his own entry in the coming contests a motor boat which is now under construction by the Herreshoff's. In view of the recognized prominence of American builders of these craft it is especially desired that they shall take an active part in the competitions at Kiel, and make a display there which shall worthily represent their high standing in this interesting and important branch of sport.

In June, 1902, there was held at Wannsee-on-the-Havel, near Berlin, an international exhibition of motor boats with special reference to the types and sizes best adapted to use upon inland lakes and rivers. A special appeal was made at that time to American builders, the managing committee even going so far as to guarantee the sale of any representative American-built boat or motor which might be represented there; but that was during the period of full-tide prosperity in the United States. All the leading American builders were stocked with orders covering their entire product for a year, and while personally interested in the Wannsee competition and appreciating the inducements offered, they were too busy with actual business in hand to send over and exhibit in Europe boats which had already been sold in the United States.

Naturally enough, no builder cared to retain for exhibition abroad a boat or motor which had been ordered by a customer impatiently waiting for delivery, and so it happened that the United States was wholly unrepresented at Wannsee and the competition, which was mainly between boats of German, French and Belgian construction, failed to reach the standard of a representative international display. This year, however, the competition will be under different auspices and on a much more imposing scale. Its purpose will be to bring together the work of the foremost motor-boat builders in all countries un-

der circumstances which will test and demonstrate their relative speed, economy and other merits under conditions which will give to a victorious record a world-wide significance.

Like other new industries of great promise, some have engaged in this business without the experience, facilities, capital, and last, but not least, the organization to carry them through the struggles, delays and costly experiments all along the way from construction to sales. Here the automobile manufacturer with an established business and a well-known name has a decided advantage. He is a perfect master of the art of combining the least weight with the greatest strength and most beautiful design, and he already possesses the equipment and experience for constructing mechanically correct frames, engines, parts and accessories. He can turn out better products with less expense than any other kind of competitor, and with comparatively little additional expense at the shop above materials and labor. He can make sales, too, at a small fraction of the cost, for his selling force of office men, travelers and agents is already thoroughly organized.

Being established, the automobile manufacturer is naturally in a position to absorb by far the greater part of the motor boat trade. Since he started in to make vehicles the science of design and construction has progressed, and he has had to keep step with the procession or be left behind. He has not only learned much, but he has made many shrewd guesses in matters that have defied perfect understanding at the time, trying to foresee coming developments in the conditions which govern business. A man of wide experience will tell you that often, while steadily pursuing some end upon which his larger energies are bent, he has gained an advantage which seemed to come from another direction. So great is the force of circumstances in a young and tremendously vital industry. The automobile manufacturer is still learning; there is no "let up" either way. Inventive brains the world over are devising new things; he must know whether the new productions are better than the old, and if so, why; and be prepared to get his share of the business through the good, progressive work he does for his customers.

From whatever point of view we consider current progress in this direction, one factor comes inevitably to the front as the essential and predominant mark of the whole. That factor is enterprise, which has come to be the mainspring and motive power of the American automobile and motor boat industries; national pride and characteristic energy, linked with an infinite capacity to achieve, have simply found here another avenue of expression. The work incidental to the promotion of marine automobiling has been shared alike by the manufacturers, importers, motor vehicle and boating clubs and the interested public, with plenty of credit to each. Some pretend to see an element of instability in the rapidity with which history in these lines is being made to-day; and the rise and fall in popularity of the bicycle is quoted at times as a warning note. But enterprise of the right sort is the surest preventative of any such result—to say nothing of the broader and sounder basis here presented. When the bicycle could no longer command this enthusiastic favor and support it suffered a decline and was largely snuffed out, to find a more permanent abiding place in these new fields.

Control of motor boat racing is a matter under considerable discussion just now. It is nominally in the hands of the American Power Boat Association, and is probably not coveted by the Ameri-

can Automobile Association, various rumors to that effect notwithstanding. Automobilists are, of course, deeply interested in the new sport, most of the leading clubs in the vicinity of open waters having already formed motor boat sections. But there is no good reason why the A. A. A. and the A. P. B. A. should not coöperate where their work is along similar lines, and leave to the latter its separate identity. Some criticism has been made of the present rules of the association on the ground that it is difficult under them for a high-powered boat to win a contest in which small craft compete, through the Marine Motor Association of Great Britain has approved their present form. However, all these things will be smoothed out with more time and further experience, and a conference will probably be arranged before long for the open discussion of the rules and other matters of interest to the newer sport and its devotees.

In motor boating, as in automobiling, one might be kept busy with the mere chronicling of what is going on in the various circles, but in these days of swift developments, people have short memories for events of chiefly passing significance. Very soon, however, the year's contests will be attracting attention, with quite a number of tournaments sure to be held in both open and protected waters. This will help to popularize the sport, since competitions well supported and carried out in a large, liberal way appeal, as nothing else will do, to the American temperament. At the same time they tend to bring out new ideas and new things, and furnish a broadly useful publicity for the sport and industry.

Public contests take up a vehicle or a launch where the designers and builders leave off with their private experiments and try them out in the open. Competitions are more necessary and naturally in greater numbers now than they are likely to be a few years hence, when only the fate of minor details will be in their keeping. To-day the vital elements in automobile and motor boat engineering are working along many lines, and a great many types are being developed to meet the different calls made upon them. The showing made in open competition is the visible sign of the parting of the ways between that which is of permanent worth and what is of temporary promise only; and there is no appeal from its verdict—except another public test.

The advance made away from the detail and the incidental in these competitions toward the essential and fundamental shows a better comprehension of the actual requirements of marine pleasure craft, and 1904 will bring out many convincing facts about the capacity and reliability of the best motor-driven boats. 1905 will see the value of all this, for the marine automobile is plainly on the threshold of new and auspicious careers. Whether we survey the whole line of its progress or the progress of its individual members, there is no hazard in saying that the field opens up very wide before it.

Too Expensive to Wait

They were telling hard luck stories of how they had suffered in their attempts to become past masters in the art of motoring.

"After all," remarked the one who was given to moralizing, "experience is the greatest of all schools in this game just as it is in every other one."

"That may be," replied the grumbler, "but very few of us live long enough to graduate, so what chance have we got in the automobile game at the price it costs us to play?"

A Fable

ALBERT'S parents were so wealthy that they often hired a man at $1.75 per day to count their Money for them. There was nothing Albert wanted that he did not get so quickly and easily that there was no Fun in wanting Anything. He missed all the Joy of being refused Anything, and so was fretting his frail little Life away trying to desire Something he could not get.

Finally he decided that he wanted an Automobile. He thought that would be the Limit. Again he was disappointed. There was one at the Front Door for him next Morning.

The blow almost prostrated Albert, but after crying about it quite a Spell he decided to get even with his Parents by making them believe that he was overjoyed with their Gift. He hit upon the Idea of going out in the Gift for a scorch on the nice Asphalt. It took some of the Edge off his Revenge by finding a French Chauffeur in charge to steer the Machine for him and keep it strictly on the Right of Way. Albert kicked and scratched some, but the Chauffeur had not been educated in France to humor Albert in America, and so stupidly attended to the Manipulation for which he drew one hundred and fifty per from Pa.

About two miles beyond the last supply place, the gasolene gave out and the Gift was stopped going "pfut, pfut."

Just then Casper Mikelsnitz, the Market Gardener's ragged little boy, came along, shoving a battered Wheelbarrow half full of frozen Turnips. Albert had often had a strong Hunch that Casper was entirely too common to play with.

"Get in and ride back to town," Casper said, with a Grin that displayed a set of Teeth that could not do a Thing to a Juicy Beefsteak.

Albert seated himself in the Wheelbarrow and was trundled home, and had more fun than a Barrel of Monkeys.

Moral—It is the unusual joy that is keenest.

An Excess of Caution

By Basil Gordon

I've jes' been readin' up about them automobile wrecks
A-sendin' people right an' lef' from this world to the next.
I really ain't a-feelin' quite as envious as before,
An' Mandy ain't complainin' 'bout the bay hoss any more.
Let others go a-motorin' 'round so reckless an' so free.
Ol' spring wagon's plenty good enough fur me.

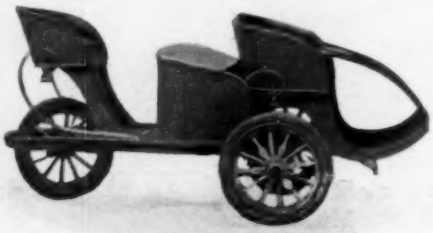
We used to think we'd like to ride inside a railroad car,
But you git aboard one minute; then you don't know where you are.
Somebody blows a whistle or somebody pulls a switch,
An' fust thing anybody knows, you've landed in a ditch.
When I start out a travelin' the country fur to see,
Ol' spring wagon's plenty good enough fur me.

I have longed to take a motorboat an' go sailin' far away.
But s'pose she starts a leak. There isn't nothin' more to say.
It must be fascinatin' fur to plough the briny foam;
But if there's any breakdown, there's no chance to walk back home.
Umbrellas ain't no good if once they dump you in the sea.
Ol' spring wagon's plenty good enough fur me.

Twice too Homely

By The Reviewer

THIS rather peculiar looking vehicle is burdened with a name thoroughly in keeping with its appearance. Called Krupkar it would seem to be either a German product or else a British idea to imply that it is a Krupp car, that is to say one made or designed by the famous German gun maker. The people behind this three wheel hybrid have the audacity to ask $460 for it, perhaps because they need the money. The affair is driven by an air-cooled motor with two inclined cylinders. It has a three-speed and reverse gear of a special type, in which the gear wheels are always in mesh, and the speed-changing is done by means of a sliding feather, the drive being transmitted to the front wheels by a shaft. The rear wheel is used for steering purposes, and is carried in a very unusual fashion, the axle of the wheel being prolonged and having on either end of it shoes which work on a kind of circular turntable; the body is supported both back and front on C springs.



It cannot be denied that there is a constantly increasing demand for a popular priced vehicle, but nothing so radical or so excessively ugly as this one is can ever expect to meet the want. The truth to tell it is just such ill advised efforts as this Krupkar horror which delay the early appearance of the cheap and good vehicle, since it tends to make of the lower priced vehicle a laughing stock rather than the really sensible affair it must be to win either recognition or serious consideration from a public already surfeited.

Speed and Tire Troubles

By S. B. Bevins

MONEY used to make the mare go, now it makes the motor go, and the faster the motor drives the faster the money goes. In other words, when you pay for speed you pay high. Slow and sure are both other words for lower cost and greater safety. Broadly speaking, the less speed you have in a car the less expensive not only will its initial cost be, but its upkeep as well, since not only is the moderate speeded vehicle far less liable to be strained and knocked about, but, still more important from a monetary point of view, is the fact that its tires suffer so much less.

It is astonishing how very small the expenses for renewals are with low powered machines. I am convinced that many who are most anxious to indulge in motoring are forcing the manufacturers of popular-priced vehicles on to entirely wrong lines—that is to say, while these would-be converts to motoring want a car at a very moderate price, they also demand fairly high speeds for it.

This is all very well so far as it goes; but it must mean that the upkeep and renewal charges will be higher than these people either expect or like. If

Lamps in front and lamps beside,
Some are seen and some will hide,
Some are green, but those of red,
Say, "Clear the road or you'll be dead."

Where's the man who wouldn't stand,
In the mud or on the sand,
Till ground up in pieces fine,
Gazing in those lamps of thine?

they would be content with a speed of something like fifteen or sixteen miles an hour they would find there was no difficulty whatever in meeting their requirements as to very moderate expenditure; but, as it is, the demand for fast pace is such that the makers are almost compelled to gear light vehicles higher than is desirable.

Then, again, as the first cost must be considered, the tires are none too large for the work they have to do, and what the buyer saves in first cost from these small tires he very soon loses, as he finds that his rear wheel tires, at any rate, are not long lived. If the purchaser would face the extra cost of large tires at the beginning he would be far better off in the long run.

In fact, with many light cars now being built there is no doubt that the purchasers would conserve their own interests if they would make up their minds to specify a gear giving a low top speed and to go in for large tires. For instance, if 3½-inch tires are used on a car which weighs from five to eight hundredweight, they have a remarkably long life, as these same tires are not infrequently fitted to cars of twelve hundredweight and even eighteen hundredweight. At least three-fourths of tire repairs are entirely due to overloading the tires.

When the Way Is Wet

James E. Smith

THOUGH it is quite possible to drive an open car through the rain for hours and for the driver when properly clothed to remain perfectly dry and comparatively comfortable still there are not very many owners of open cars so enthusiastic to start out in a heavy downpour, even when thoroughly provided with rain-resisting garments. This is another argument in favor of covered cars. Though by this is not meant cars with fixed roofs or detached brougham bodies, so much as vehicles provided with hoods and hinged screens. With a carriage thus fitted, it is possible to drive in the worst weather without discomfort. Not only are the occupants protected from the rain; but, as the sides of the car are open, they are able at the same time to enjoy fresh air.

There is nothing more invigorating than a drive on a pouring wet day with a car equipped in this manner, as the driver and his companion are completely protected, and are able to obtain the full benfit of a change of scene and the exhilaration of the air of the open country without exposure. There is a particular satisfaction, too, in being able to use the car when practically all other forms of outdoor amusements are impossible except under great discomfort.

Of course, the glass front is not satisfactory when covered with rain at night; but in the daytime it is perfectly easy to see through it, and there are no objections to its use; while, even at night, spectacled drivers see as well driving behind a wet screen, if not better than with rain-spattered spectacles. The wet, while it may obscure the screen to some extent, does not affect the focus; but every wearer of glasses is painfully aware of the fact that he is practically blinded by rain, owing to the drops which remain on his glasses altering focus to a painfully aberrating extent.

To people of leisure it is not so much of a hardship to miss a drive owing to wet weather; but for those who are more or less tied down to the stern ne-

cessities of earning a livelihood, it is very disappointing, and I strongly advise all who can afford it to have a hood and screen fitted to the front seat, and where the design of the car permits, one to the back seat as well, though even when this is impossible the front hood will be found a great protection to the occupants of the back seats.

So long as the mechanism of the car is properly protected, it will come to no harm from a long drive in heavy rain; and even in the case of absolutely unprotected chains, they are not hurt in the least so long as they are kept well lubricated. If there is not an opportunity to clean them immediately after the drive, they should be plentifully oiled when the car is put away. This will prevent rust, and they can be attended to at leisure, when time and opportunity permit of your doing so.

Some Documents in the Case

By Nellie Newport

DEAR MABEL:—Although I wrote you a long letter yesterday, I must write again to-day and tell you the good news. Papa has consented to buy me an automobile. It took a whole week of tears, pouts and pleadings, but at last he has ordered the machine, and it is coming down to-morrow, although he says he expects to have to order my tombstone in the near future.

By the bye, Helen says she knows all about automobiles, and I am going to take her out on my first spin. Wish you could come along. I know we shall have a grand time.

Dear Mabel:—Well, the automobile arrived. It is the cutest thing you ever saw. Dark maroon and as graceful as a fairy. I am fascinated with it. Papa insisted on engaging an expert chauffeur, but I wouldn't hear of it. What is the use of owning something you are afraid to run yourself? Mr. Wilson came over and showed me a few minor details, and after that I knew everything.

Why, I actually ran it two blocks as pretty as you please. Mr. Wilson begged to give me a few more lessons, but I declined with thanks. Why, he is worse than papa. I wonder why men always have such little confidence in woman's ability to do anything? It is provoking.

However, to-morrow Helen and I will show them that we are not so slow, after all. We are going to take a long spin into the country. Oh, how I wish that you could join us! Wait until I write about our delightful trip. You may expect to hear of some fun. From your loving friend, EDYTH.

Dear Mabel:—I must start my letter by asking you if you ever felt as though you had been brushed aside by a loco-

motive, used as a carpet by a stampede of mules or run through a wringing machine? If you never have known any of these delightful sensations I am sure you can scarcely experience my feelings as I lie, propped up by pillows, writing this letter.

Dear Mabel, we took that trip. We started from our cottage with buoyant hearts and cheeks flushed with excitement. It seemed as if we were drifting over velvet and our speed increased. Helen was delighted, and her hair trailed on the breeze. People along the highway stared, and I could feel my bosom rising with pride. I felt that I was the chauffeuse.

On, on we went past gaping rustics and barking dogs. Then suddenly I thought I would slow down a bit. Horrors! I could not remember which lever was to be used for that purpose. It was a terrible moment. There was a curve in the road ahead, and we seemed to be going like the wind. Then I remembered about Helen saying she knew all about automobiles and looked around. Poor Helen had fainted dead away and was in danger of falling out. I held her and set my teeth for the worst. It came. We reached the turn and I remembered no more.

When I opened my eyes I was lying on the sofa in our parlor. "She isn't much injured," I heard some one say; "only suffering from the shock." I looked up and saw papa, the doctor, and Mr. Wilson. "What has happened?" I demanded as soon as I could find my breath. "Nothing, dear," spoke up papa, "only you went out and smashed up your new automobile. But never mind, all little children break their toys soon after they get them."

Papa actually laughed, and I was mad as could be. Then he made matters worse by saying that he thought a goat cart would suit me better than an automobile.

But who do you think found us, dear? That horrid Mr. Wilson. It seems that he became uneasy about us and had the presumption to follow us in a big touring car he owns. He saw the accident from a distance and was the first to pick us up. I bet he will gloat over that for a year.

But I must tell you about Helen. She wasn't injured one bit. Probably because she landed in a haystack. If you know any one who thinks they can run an automobile without first having very thoroughly learned how, tell them of my experience. Well, I must close; you know injured persons can't exert themselves too much, and besides, Mr. Wilson, who is going to take me out in his big car, has just driven up looking the really handsome fellow you know he is. From your less conceited friend,

EDYTH.

How It Enriches the Language

"Is it all off between you and Pertie Goodwin?"

"Looks like it. She won't go automobiling with me any more."

"Have a quarrel the last time you went out?"

"No. She asked me, though, if I didn't want to rest my hands and let her steer a while."

"And you didn't do it?"

"Naw."

"Well, that's where you lost your clutch."

All Out

"I was looking for you and that new racer of yours on the boulevard yesterday, but you weren't out, were you?"

"Huh! I was out three different ways. First, I was out in it; then I was out of it, and when it finally swerved and struck the curb I was out on it about $600."

Won by Machinery

By Col. John R. Cresco

IT was a critical moment.

The Japanese general lowered his field glass and nodded to his aide.

"Lieutenant," he said, "the next five minutes will decide the fate of our army, perhaps of our nation."

"Yes, general," and the handsome young fellow touched his cap.

"The enemy is now descending into the plain. He means to overwhelm us by a continuous movement all along the line. He knows we haven't cavalry enough to withstand him. While we have managed so far to preserve our formation, we have but one hope left."

The young officer touched his cap again.

"Yes, general."

"Lieutenant, are the scorchers in their seats?"

"Yes, general."

"Are their fuel tanks charged with the rankest Lima oil?"

"Yes, general."

"And are they all properly oiled, and inspected, and the mufflers all removed?"

"Yes, general."

"Then you may report yourself at once to Col. Whizgeezer and tell him, with my compliments, that when I raise my hand in this fashion he is to ride directly at the enemy's center."

The lieutenant saluted and retired,

DAS SCHNAUFERL'S COMPRESSED AIR ROAD CLEARER

and the general raised his field glass. A moment later he waved his arm violently. A peculiar humming sound filled the air, and up from behind the crest of the slope four-score protected war automobiles came into sight. For a moment they seemed to hover on the ridge, black, silent, terrible. Then, as if by one impulse they plunged down the slope and sped across the plain.

A shower of shot and shell was hurled at them, but there was no chance for aim. In exactly ninety seconds by the general's watch they covered the three

miles and plunged through the dense ranks of the Cossacks. Right through they rolled like so many fiendish juggernauts, and then they turned and rolled back.

Forward and back and down the middle they drove and tore and crushed, and those of the enemy who were not flattened beneath the wheels were asphyxiated by the awful odors of the untamed Lima crude. In a dozen minutes it was all over, and the scattered remnants of the Russian host were legging it down the pike to beat the band.

"Horrible!" groaned the general as he covered his face with his gloved hands. "But at the same time," he smilingly added, "let me not forget that I own a handsome bunch of stock in this war car company, and that we couldn't have a better advertisement for our machines than this lively little scrimmage. The world is our market sure enough."

And the commercial instinct having thus asserted itself, the general stepped up to tender his congratulations to Col. Whizgeezer, who was riding forward to report how satisfactory the new form of warfare had proven itself.

Ounces of Prevention

By "The Doctor"

THERE never was, and most likely there never will be, a car upon which certain nuts do not persist in going wrong no matter what the annoyed owner may do to prevent or to correct the fault. Even when these trouble causers are provided with lock nuts, both nuts will sometime work off if the thread does not fit properly or if it is too coarse. When a cotter pin is provided through the screw alone, beyond the nut, it effectually prevents the nut from being lost, but does not keep it from becoming loose. Cotter pins, to prove really valuable, should pass through a hole drilled through both the nut and the screw.

After a lost nut is replaced, it can be prevented from working loose by winding wire into the thread of the screw close to the nut and twisting the ends tightly together with the pliers, or the protruding part of the thread may be battered with a hammer, though this is hardly workmanlike. If no nut is at hand to take the place of the missing one, sometimes a crude process of riveting can be resorted to, which may hold things together for a while. The end of the screw or bolt can be cut off short with the cold chisel, and with the aid of a hammer or the head of a wrench and a convenient stone, the end of the screw may be upset and headed over so that it will hold. If the bolt happens to have been lost with the nut, it is sometimes possible to make a temporary "hitch" by passing heavy wire through the bolt hole several times and twisting its ends together with the pliers. Wire is one of the most useful things that should be carried on every car.

Unfortunately, there are many cars in service in which even ordinary precautions against loose nuts have not been taken, and occasionally, despite inspection, a nut will be lost and something will suddenly break loose. It is then that the spare nuts in the tool box become valuable. The manufacturer who can put his machine together and use only a few standard sizes and threads, nuts and bolts confers a boon on the buyer, and in so doing deserves credit, as a very small stock of nuts will then meet all emergencies, and, if they are

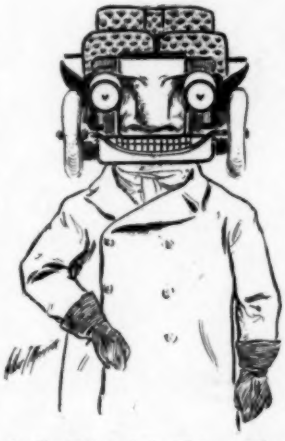
of standard description, they may be purchased at almost any hardware store.

In addition to the full set of wrenches, screw driver, oil can and pump which are furnished with most cars, the following articles, among others, will be found helpful, and should be carried if space permits: A small pipe wrench, a file, a cold chisel, a pair of lineman's pliers, a good jack-knife, extra links for the chain, asbestos for engine joints, cotton waste, an extra supply of oil, a tube of white lead, a roll of adhesive tape, an extra pair of sparking plugs, spare nuts of all sizes and threads used upon the vehicle, a voltmeter, a coil of galvanized iron wire, and some insulated copper wire and fine steel wire. The above category may almost seem to constitute the "machine shop" which the detractors of automobiles claim has to be carried about with each car, but, as the automobilist cannot be expected to "make bricks without straw," the articles enumerated had better be carried if possible.

Sliding Down Hill

By "Clutchoff"

COAST whenever you can in a general way should be considered good advice to give the driver of an automobile. Whenever the vehicle will proceed at a reasonable speed without the aid of the engine the driver will find this to be the safest, quietest, and most economical way of motoring down hill. To do this it will only be necessary to press down the clutch pedal and withdraw clutch from contact with the flywheel, letting the clutch in gently as the end of the coast is approached, so the engine may take up the driving without fuss.



As the Motor-phobe Pictures Him

Just what speed should be attained before the clutch is thrown in will depend solely upon what grade is next to be attacked; but if the descent continues gently or is followed by a level stretch of road, then the third or high speed should be engaged. The car having some momentum from the descent, the motor will be found to pick the drive up very smoothly. If, however, the drown grade is followed almost immediately by a rise, then the clutch should be let in and the gear engaged earlier, in order that a good rush with full power may be made at the opposite slope. When you have learned exactly what the car will do, it is well to accelerate the engine more or less for this sprint. It is always best, particularly if the hill to be descended is of any length, to move the gear-striking lever back to the free gear notch, as then should any shock, bump, or accident jerk or slip your foot from the clutch pedal, and let the clutch in with a bang, little harm will be done. Otherwise the driving economy and gear generally might be subjected to a damage causing shock, particularly if the car was over-running or under-running the speed of the gear thus accidentally let in.

In descending hills with the engine free, it should be throttled right down,

so as to cause it to run as slowly as possible, the ignition being well retarded at the same time. Before striking a gear and letting in the clutch, the driver must not fail to open the throttle, advance the spark, and get the engine running at a speed sufficient to take up the drive so soon as the clutch is thrown in.

When a switch is handy, the current may be cut off altogether, thereby stopping the engine, where the character and length of the descent will warrant. Then when the time comes for taking up the drive the high speed is struck, the clutch let in, and the current having been switched on and throttle opened, the momentum of the car will restart the engine.

The precise speed at, and the grade upon, which an engine can be started in this way is only to be learned by its owner through practice. But neither from a cooling nor from an economical point of view is it worth doing on short hills; indeed, it would not pay to go to the trouble on any slope which afforded much less than half a mile clear coasting.

Valve Springs May be Too Strong

Some engines can be improved by altering the strength of their inlet springs. If the spring is too weak the fault is quickly located by the resultant back firing. When, however, the spring is too strong, the engine apparently may run well, but it certainly will not be giving its best results. The loss of power is more especially noticeable when the engine slows down under a heavy load (as uphill). Here, owing to reduction of piston speed and consequent lessening of the suction produced by it, the overstrong spring prevents a full charge of mixture from entering the cylinder.

In this latter case a very weak spring —even one that would permit back firing at high speed—enables the engine to climb hills which otherwise are too much. From this result it is clear that the inlet valve spring could be weakened for uphill work with advantage.

There are engines fitted with an arrangement by means of which the strength of the inlet spring is increased by moving a handle in a suitably notched quadrant, conveniently arranged on the steering column, the result being to throttle the engine.

If in the above case the spring were left below the normal strength, and pressure applied by "notching up" sufficient to prevent back firing at usual speed, on the engine slowing at a steep hill the extra pressure thus applied could be taken off, and a considerable gain in hill climbing power would be noticed.

A very large number of engines would stand a turn or two cutting off their inlet springs without causing them to back fire, and with a surprising increase of power resulting. This is of more importance to owners of small powered cars, where just this little improvement makes the important difference between climbing easily or otherwise.

Cure for Flooding

A flooded carbureter caused through a leak in the float was cured by shutting off the gasolene supply and emptying the carbureter, then with the supply cock a little open, the engine was started and regulated by the supply cock until the damage was repaired. Some time later the engine got gradually slower on long hills. The fault was traced to the carbureter spindle valve jamming through wear of the balance weights. A nick was filed on the spindle, a wire attached and led to the driver's hand. When the spindle was pulled up the car danced up hills as usual.

Automobile Patents, Useful and Otherwise

By Robert Bruce

IT seems that the automobile has now come to occupy the same position which in former years was occupied by the bicycle as the parent of a host of inventions of no practical value to the industry at large. Many inventions of undoubted merit there are which appear from time to time, for American ingenuity brings out many ideas and devices of real value as well as a great many which are perfectly worthless. Such a condition is inseparable from a period of swift growth; and the net result will only be known when all this mass shall have been sifted and the wheat of useful and practical devices separated from the chaff of the worthless output of earnest but misguided minds.

The files of the Patent Office are cumbered and the shelves of the model rooms already groan beneath the weight of these concrete expressions of ideas, which range from the profoundly practical to the utterly useless and laboriously absurd. The patent lawyers are responsible for most of this activity. Their calling is in itself legitimate, yet the utter uselessness of a device from any point of view will not deter them from putting into legal form and filing an application for a patent on it in order that they may collect a fee therefor. If the sanguine inventor has or can borrow the necessary money to pay for their services, and if search shall show that the device is patentable, they stand ready to secure for him a patent upon what, if they have enough practical knowledge to fit them for the practice of their profession, they know can never afford him any return. Some of the drawings of inventions which appear in the trade journals will admit of no other construction. The advent of the motor vehicle seems to have diverted from their usual vocations a host of fortune seekers.

It is regrettable that so many useless inventions should have been exploited, for their failures have doubtless served to discourage the possessors of practical ideas which, with proper treatment, might be brought to useful forms. There is likely to be a simplification of means and modification of many to a few standard types and methods of construction, the differences being broadly basic, and not merely varying methods of applying the same idea. The granting of a patent is in itself no sufficient test of the utility of the device so pro-

"Hey, mister! Take off dat cheap price tag!"

tected. The value of any improvement must be shown in actual service; and by this alone can its worth be proved.

Throwing in the Clutch

It seems a hopeless task to attempt to impress upon the average beginner's mind that he must not start the vehicle with a jump, a jerk and a jar. The ordinary performance is for the driver to get the engine running at full speed, or even to have it racing a little, and then in goes the clutch with a bang and the car is started with a jerk. There are invariably the owners who most loudly complain of the way their tires wear out and of unexpected failures in the mechanism of the vehicles they abuse. They do not seem to recognize that it is impossible for rubber tires, however well made, to stand such treatment as this when it is remembered that it is repeated practically every time the car is started. As to damage to the engine or transmission, this is inevitable sooner or later, even though all cars are made with ample margin of extra strength so as to, as far as possible, resist this violent treatment. There is no reason whatever why the clutch should not be let in gently. The car will then move off without shock to its occupants or damage to itself, and the owner will save tire and other repairs.

Music by Motor

By "The Listener"

"THE hand organ of the future and of the near future, too," said the talky member of the club, who said he had given the subject some thought, "will undoubtedly be one carried about in a motor driven vehicle, while the organ itself will be power-ground, not hand and crank-turned.

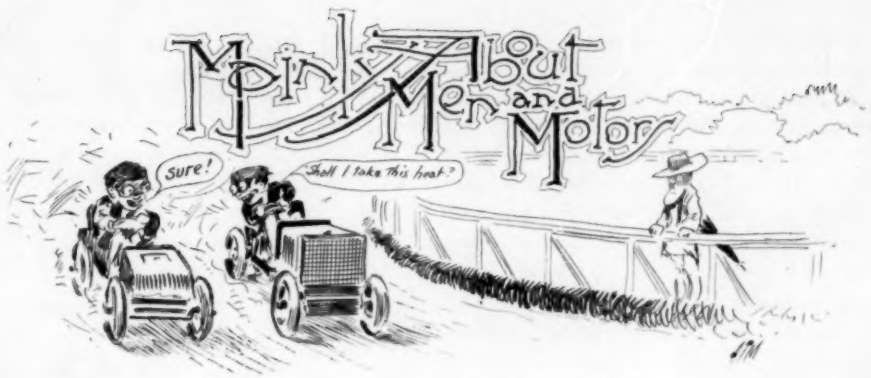
"This will be in direct line with the trend of all modern endeavor, namely, toward the highest efficiency, with the greatest economy of operation. It is a familiar fact that the modern piano organ that is carried about on wheels requires the services of two men to operate it; one to play the organ and the other to look after the collections; while the two are required to draw the organ, especially on the long hauls which must be made to insure profit from business.

"There have lately appeared in New York's streets hand organs drawn by horses; a novelty that has proved a great attraction and a great money drawer, but at an enhanced cost of operation; the keep of the horse having to be added to the wages of the two men.

"Now the automobile-carried and power-driven organ will be a greater novelty even than the horse-drawn hand organ and no doubt a greater attraction and money drawer, and it can all be operated by one man; a greater result than ever will be achieved, with the expenditure of less labor, while his radius of action will easily be quadrupled.

"The street organ will be moved from point to point in its motored carriage and will be operated by power from the same source that moves the vehicle, which can be turned on and off at the pleasure of the operator, who, having made a halt somewhere and started the organ, can devote himself then solely to the business end.

"Undoubtedly this will be the next step forward in the evolution of the hand organ, and it wouldn't surprise me a bit to see the motored organs appear at any day."



MAY the Saints protect us from those hippodromers down South! What a roar will go up when those who attended the Florida tournament learn that "Dr. Chas. de Garmo Grey" has been heard from at Hot Springs, from which place he telegraphed a blood-thirsty challenge to Colonel "Billy" Thompson, who is at New Orleans, arranging some races between those "bitter" rivals, Mister Barney Oldfield, who is doing some barney business in the South, and his "bitter" rival, Hausman, who was engaged by some body—not the Ford Motor Co.—to drive "races" against Oldfield. "Dr." Gray, who is a horse doctor, takes due care to show that fact in the clothes he wears. In his challenging the hippo says he represents that brilliant turfite, John J. Ryan, who was recently called to account for an alleged "get rich quick" racing scheme, and who in consequence was asked not to favor legitimate race tracks with his presence. It seems that Mr. Ryan now feels it his bounden duty to break into the automobile game, and only recently he was quoted in the newspapers as being desirous of racing against W. K. Vanderbilt, Jr. Henry Ford and his people should try and buy back the "999" that Hausman is driving, since it now looks very much indeed as though it was being used to damage the reputation of the Ford Company. Fancy a machine with a record of 39⅘ seconds trailing behind a Baby Bullet, which never made a mile in less than a minute! Just listen at this from *Topics:* "At Savannah, Ga., last week Barney Oldfield, driving the famous Winton Bullet No. 2, defeated the famous Ford Racer 999, two heats out of three. The first heat was five miles and won by Oldfield in 6 minutes and 17 seconds, as Hausman's machine broke down in the final stretch. The second heat was won by 999, which covered three miles in 3 minutes and 23 seconds. The final heat was won on a fluke by Oldfield, who failed to keep his agreement of

starting off at the same time. Oldfield's machine was let out at its full speed, and Hausman's machine had to slow on the corners. The track was dusty, and the machines broke down often. On the third trial, Hausman had a lead of nearly a mile, as Oldfield's machine broke down, but Hausman did not claim the race. Hausman's nerve at times was astounding. Once when turning a curve at full speed, he turned around and looking back saw Oldfield coming. Hausman turned on speed and shot in a winner by a quarter of a mile."

Now what say my gentle reader, don't you think the nerve of the crowd was astounding, and don't you think that the editor who failed to make some comment on such a story was not at all lacking in a full share of that commodity? You will notice that it took Oldfield 6 minutes and 17 seconds to cover five miles, while it only took Hausman 3 minutes and 23 seconds to do three miles. You will also notice that Mr. Hausman was playing "hide and seek" with Oldfield, and that one or the other of the machines broke down about every turn of the course. It is too bad that the racing board of the A. A. A. allows such things to go on, for most certainly if they continue they are not going to do either the automobile or its racing any good. You can expect many "world championships" to be decided down South during the next few weeks. Fancy a $20,000 match between Oldfield and a man backed by Ryan. By the way, did Oldfield and Tom Cooper ever keep an agreement written or otherwise? For reply consult either of them, or Glen D. Stewart.

Advertising is not only a wheel in the automobile business, but it is the driving wheel. It runs the chain between producer and consumer, and the trick of it all is to get it to do its work with the least friction.

You are hereby notified via the Automobile Club of Great Britain and Ireland, that the word "chauffeur," as applied to a man or anything else connected with an automobile is dropped, and in its place, the more sensible term of "motorman" will be used. Also take notice that "garage" is passe, and its place will be taken by "motor house." "Chauffeur" emigrated from Paris and landed in London, from whence, at great expense, it was piloted to Fifty-eighth street and Fifth avenue, New York, where it was fondly coddled by a lot of people who always take their language and their fashions from Paris, via London. Let us all be thankful that these two hybrids have been given a decent burial. May there be peace to their ashes! Why they ever should have found lodgment on the land of liberty I never quite understood. "Motorman" is an improvement, though I think "motorist" would be better, so as to give Women's Rights a chance; "motor house" sounds far better than "garage," which always sounded too much like "garget" for me to like it. For these small mercies may we all be thankful!

There will be weeping and wailing and gnashing of teeth among manufacturers of automobiles and dealers therein if the salesmen of the former are not more cautious in their selling to the latter. It is the too generally accepted idea that a salesman should sell all he can sell, even if in doing so he loads the dealer up with more stock than he knows the dealer can dispose of without a sacrifice.

As models are changing very rapidly these days it behooves the cautious dealer

not to load up too heavily with stock, and if the manufacturer is equally wise he will instruct his salesman very decidedly in this direction. If he does not, one or two things will happen. The dealer will either get stuck with unseasonable and unsaleable goods which he will have to sacrifice if the manufacturer does not take them back, or he will sacrifice them, which will damage the manufacturer's reputation, while it cripples the dealer and makes enemies among his customers who paid him the long price early in the season.

If the Virginia Beach boomers had not made such inflated claims as to what they were going to do to the Ormond-Daytona course, and what a hurried burial they were going to give it, there might be some sympathy expressed for them in their present unfortunate plight. The sad tragedy calls to my mind the opening lines of the poem on "The Burial of Sir John Moore":

"Not a drum was heard, nor a funeral note,
As his corpse to the ramparts we hurried;
Not a soldier discharged a farewell shot,
O'er the grave where our hero was buried."

It takes something more than talk, claims and imitation to accomplish things. It takes judgment and safe foundation to work upon to be successful. Any imitation to be successful must have judgment at the steering wheel. After reading the dispatches in the papers, it would seem that all Virginia Beach really needs to compete successfully with the Ormond-Daytona Beach, is, first a beach just as good as the Florida one, a favorable wind, cars fast enough to accomplish things, and the proper management. Some misguided, uninstructed newspaper men were so cock sure of success, before they went on the junket that they are now trying very hard to explain how it all happened. The public will take with a grain of salt most all these prognosticators proclaim in the future. It is a case for some people to mourn over, but, as for myself; well, I merely smile.

When Richard H. Welles, the presiding genius of the Badger Brass Works, offered one of his famous Solar search lights for every world's record broken on Ormond-Daytona Beach, he did not know exactly what a hard game he was going up against. The offer was made at the Madison Square Garden Show, when I had chided him for not replying to my invitation to offer a lamp as a prize at the meet. Mr. Welles was on his wedding tour at the time, so he certainly had a most excellent excuse for overlooking my prize begging communication:

"Never mind," he said, "I will do something better. You can announce that I will give a Solar Search Light for every world's record broken at your Florida race meet."

As a result of his offer the only thing that saved Mr. Welles from having to present W. K. Vanderbilt, Jr., with 50 lamps was because we could not take the entire 50 miles, checking off each mile. As it is, he will send Mr. Vanderbilt 7 lamps, while Messrs. Basle Ross, Hastings, Bernin, and Bowden will get one each, making a total of 13 of the great light givers for prizes. I telegraphed Mr. Welles as follows: "Prepare to ship 50 world's record Solar Search Lights, or prepare to suspend." To which came the answer: "I stand pat. Dick." Of course no one who knows R. H. W. would have expected any

other reply, since he always "stands pat" once his word is given. Thanks to Mr. Welles, Mr. Vanderbilt will be able to have lamps all around his favorite car, making it easy indeed for him to obey the injunction, "let your lights so shine, etc." Mr. Welles declares he will make the same offer next year, so another inducement is thus already announced to aid in making the 1905 Ormond-Daytona race meet, the greatest event of its kind in the world.

That the Mt. Washington, New Hampshire, National Mountain Climbing contest is going to be a success is now assured beyond a doubt, while the building of a two-mile track at the foot of the mountain is almost equally a settled fact. It is proposed to start the affair early in July when the tide of travel to the mountains begins in earnest. The whole idea of this affair is to popularize automobiling, and on the plans now being completed the affair will attract world-wide attention, since it will be the only National Mountain Climbing Championship ever given, and it is doubtful if the course chosen can be duplicated in any part of the world, since it is an eight-mile climb over a good private road to the top of the famous mountain.

The two-mile track will surely provide for the world's track records, and it will be the only two-mile track ever constructed for any such purpose. The mountain residents are very enthusiastic over the idea. The famous Ethan Allen Crawford, son of the great man of that name, who has always been interested in anything and everything for the good of the White Mountains, writes that he will do any and everything necessary to make the game of mountain climbing by automobiles a popular, as well as an instructive form of touring.

General Wentworth, of Jackson, N. H., writes me: "Your idea is a capital one, and I shall be glad to do anything to help it along. I will see that a suitable trophy is provided for Jackson."

We have had a lot of speed contests which have done and are doing much to call attention to the possibilities of the automobile, but The National Mountain Climbing Competition will once for all prove to the sceptical that the motor vehicle can go in comparatively fast time, wherever a road exists.

Veeder product is known the world over and favorably known, at that. It is said the pugilistically inclined emperors of the earth use tachometers of Veeder make to keep track of their war pulse. D. J. Post, the president and "builder up" of the Veeder business, recently returned from Europe, so when I called at the Hartford factory to ask how he found King Edward, Mr. Post said that European royalty was thriving, and while he did personally dine with the king, he did dine with several who had done so. From them he learned that the Veeder odometer was one of the regular equipments of the king's Daimler. Mr. Post's firm has built up such a tremendous European trade that it is obligatory for him to go abroad almost yearly, so he may study at close range the wants of his foreign customers and see how the immense jobbing trade in Veeder goods is handled. That to do this demands that Mr. Post see agents in ten countries proves the wide sale of these Connecticut goods abroad.

Speaking of America's automobiles in Europe, Mr. Post, who is a very close and shrewd observer said: "Do you know that the Gordon Bennett race, so

far as American automobiles were concerned, left a bad taste in the European mouth, and the growing demand for our product in this direction received a severe check which will only be remedied by a few decisive wins, like that of the little Oldsmobile which made its gallant charge across English roads recently under the command of Charles Jarrott and W. Letts, capturing not only the gold medal for first, but also the second prize, a silver medal, as well, so far did it outclass everything else competing. In fact, this performanee of the Olds was the talk of Europe.

"In Sweden on the train and while nearing Stockholm a lot of foreigners were talking war and the arts of peace, when a big Englishman who was a much traveled and clever fellow said to me: 'Mr. Post, what was the matter with those American racing cars in Ireland this summer?' 'Why, I guess they were not fast enough; at least I think this is the unbiased opinion in the United States,' I replied. 'Well, that is what we thought, too, and we did not take any serious view of the excuses made by your entries, although, mind you, we sympathized with you. We in England, Mr. Post, judge both men and machines by their performances only, and any excuse for failure of either or both finds little room in our judgment making.' That can be written down as a fair condensation of European opinion, and I hope no other team will be sent over to represent America unless it is thoroughly prepared to do itself and this country full credit."

All this reminds me that the odometer had its inception long before either Mr. Post or Mr. Veeder was born. That something of the kind was even in use before the Christian era is evident from the fact that one is described by Vitruvius in a part of his work "De Architectura." Coming down to our own times the instrument in a crude form has been in continued use, under intermittent improvements, and has played no small part in civilization's advance. Many State and county maps now in use were prepared by odometer surveys.

Originally and for many centuries a crude, heavy, unsightly instrument that recorded merely the revolutions of a wheel or disk, the modern odometer is trim, light, symmetrical, and by an ingenious reduction of gears the miles and fractions are at once recorded. It is keeping well within bounds to say that the inventive and mechanical genius of the Post-Veeder combination has done more for the odometer than was accomplished during many preceding centuries, and this is due naturally to the incentive produced by the increased use of wagons, the perfection and universal use of the bicycle, and to the recent advent of the automobile. The odometer's early employment was chiefly that of surveying roads and land boundaries, but increased means of transportation, like bicycles and automobiles, has created a larger field until tens of thousands are now annually made and find a ready market.

The sudden popularity of the power boat colloquially known as the "auto boat," will be a veritable bonanza for the engine builder. Factories all report excellent orders for marine motors. As an example of this F. P. Conrad, of Buffalo, told last week that he had just shipped twenty-five marine motors to Jacksonville, Florida, and is now figuring to supply a large number of light weight two-cycle motors for launch purposes. That he can do this he showed me a two cylinder 15 H. P. motor

weighing only 300 pounds, and a 24 H. P. one weighing over 400 pounds.

"You see that we are making progress as manufacturers of covering for automobiles," said Colonel Charles H. Sprague, at Norwalk recently, when I visited the now nationally famous head of the umbrella company bearing his name. I found the popular Colonel certainly has made a lot of progress since I interviewed him three months ago. A new addition has been built equipped with machinery for wood working. Despite all of this, however, the Colonel now thinks he will eventually have to build an entirely new factory to take care of his canopy trade. Several orders arrived the day I called, including a big one from John Wanamaker.

The Sprague people practically control the carriage top business of this country, and have quite a large plant devoted to that line of business. Their canopy and shade umbrellas are in use all over the country. The central location of the Sprague plant and its economical management makes it possible for the Sprague people to manufacture this top hamper cheaper than anybody else. In the matter of lumber alone for the frame of the tops Colonel Sprague is in position to beat most of his competitors since he cuts his own wood, owns his own mill to saw it, and hauls it to his own drying plant, so there is no intermediate product for anybody. The obvious benefit of this to the Sprague customers needs no comment.

Before you send the ad to the publisher just read it over and ask yourself how the man next door, your neighbors and your friends would regard each statement. For they are living, breathing human beings, representative of the same human beings who are to read your ad. What will appeal to them can be depended upon to appeal to their kind. What will not receive their sanction can never touch humanity in the mass, and in advertising automobiles never forget that it is mass plays you must constantly aim at.

Making all due allowance for the favoritism all men show when weighing up their own good points, still I believe I am really a bit better American than the most men. By this I mean my belief in America, in her ability, possibilities, etc., is greater than most people are inclined to have. Whenever the question arises as to whether America can do this, that or the other it never once comes to me to question her ability to do it, and to do it better and quicker than anyone else can. Despite all of this belief, I must say that when it comes to tires, I am beginning to waver a bit on this pro-American idea of mine. When I stood, or, to be more truthful, sat on the beach at Ormond and saw record after record go to Continental tires, I was given a demonstration of the value of at least one thing "made in Germany" which permitted of no possible doubt as to superiority of the Continental caoutchouc's product over any other. I tried to argue that if the vehicles which won had been equipped with American tires they might have done quite as well or maybe even better than they did with the German ones, but even I with all my love for and belief in American ability, couldn't delude myself to that extent. I knew that if America made even as good a tire as these Germans made, that everybody would not be breaking records on

German tires, someone and somewhere, to say nothing of somehow American tires would be seen, but when they were not, it was simply an irrefutable argument that for the present, at least, we are not in the same class with the foreign tire makers. Don't ask me why, nor when, if ever, we are going to be, because I don't know. Furthermore, I don't think anyone else knows, either.

When the time comes that manufacturers of automobiles produce a machine which will run 365 days in the year, and does not have to be laid up during the winter months, that will be about the time the public will take a deeper interest in the use of the automobile. This fact was brought vividly to my mind the other day in a city in the northern part of New York State, when I saw a Crestmobile towing along a machine with a water cooled motor. The Crestmobile, as some know, is equipped with a motor of the air cooled variety. I do not know whether the air cooled engine will solve the all the year around problem or not, but I am inclined to think it will, if it is properly equipped with a correct system of fans.

The public will never be seriously inclined to invest in a costly machine if they are expected to keep it in the stable most of the winter. The automobile should be built so as it can be run every day of the year. There is a serious side to all of this. Take the case of the doctor, a call for whose services is apt to be urgent. He has to maintain a horse and carriage to do the work which any well constructed automobile should do. The number of doctors who can afford to maintain both an automobile and a carriage are not many. Neither are there many business men who can afford to maintain examples of the two methods of conveyance. Of course in the Southern States or on the Pacific Coast any kind of an automobile which is built right is in no danger of frozen pipes, but in the Northern and Eastern States there is always in winter this danger of freezing.

It will be remembered that the Knox and one other Eastern car were the only machines that could be operated at the Chicago show last year during a 20 below zero blizzard. Now the Crestmobile is driving toward the head of the procession with their air cooled 1904 models.

Not long ago I visited the factory where these cars are made, and I was surprised to see what progress the firm has made within a year. The touring car was really a revelation to me since equipped with a 15 H. P. air cooled motor, it weighs only 1 200 pounds.

If any proof was needed that advertising pays, the present tremendous activity in motor boat building is a most excellent example. It is largely due to the automobile press that the existing activity prevails, since it has been persistently booming the automobile boat, with the result that boat makers everywhere are feeling the favorable effects from the interest thus created.

It was the automobile press which started the daily papers on the motor boat, since the average reporter on the dailies never fails to hie himself to the garret and absorb much that is good from the trade and class papers which he knows are posted on what they are writing. The daily paper is quick to take advantage of this and to give a wider publicity to the subject than the weekly or monthly publications.

The automobile boat will in a measure compete with the automobile for public favor since it is a new mode of pleasurable excitement. The automobile has the advantage of being an all-the-year-around affair and it can cross lots when necessary, or go through the woods, while the boat has to confine its legitimate performances to the waters, any efforts it makes to invading the automobile's territory invariably resulting in disaster. The wise man owns both an automobile and a launch. The coming summer and winter will see much in a boating way, the new type of boat with the automobile engine, being certain to have a tremendous vogue.

I have already completed plans for at least three great automobile boat carnivals on the Florida East Coast.

Recently I assisted in organizing the Palm Beach Power Boat Association, of which Mr. Henry M. Flagler is president, and the energetic Fred Sterry, the secretary. Mr. Flagler, of course, is the well-known creator of the beautiful Florida East Coast, and Mr. Sterry manages three of the largest hotels in the United States, two of them at Palm Beach—the Royal Ponciana and the Breakers—while the other is the Hot Springs Hotel in Virginia.

The interest in the affair has already induced a number of society people at Palm Beach to offer several thousand dollars for prizes for the first annual water carnival, which will be given between January 17 and February 6, 1905. This series of tournaments will start at St. Augustine, where Joseph P. Greaves will organize an association to care for them, after these will follow a marine parade and other interesting events at Ormond and Daytona. Palm Beach will come next and the finish will occur on Biscayne Bay, at Miami.

Already I am assured of a number of foreign entries and over thirty American ones.

It is astonishing what a wonderful distinction the Ormond-Daytona races have conferred upon one or two of the officials. I was amused to read in a Buffalo paper that one of these inflated ones is now starring on the prestige Ormond gave him. He told the reporter that it was he that "ordered" W. K. Vanderbilt, Jr., around, and told other millionaire drivers what to do and how to do it. He also informed the astounded public that the A. A. A. wanted him to start the cup trial races on Virginia Beach, but as he was busy running an automobile business, the job offered he regarded as rather a thankless one. One of the New York papers was so overcome at the idea that it deplored the fact that this man would not longer start races, and ventured to remark that his place would be hard to fill. Ask the sands of the Florida seas whether one of them will be missed, and the answer will come back: "The sands of the sea cannot be numbered." When a man gets to think that his services are indispensable, that moment he is going wrong. There are none so good that better cannot be found, none so valuable that others more valuable are not in waiting.

When I arrived at the Buffalo Show, Secretary Wagner, of the Buffalo Automobile Club, informed me that Mr. Butler, of the *Evening News*, wanted to speak to me. At the time the message was delivered to me I was admiring the full line of Ramblers and the beautiful stand to exhibit them which had been

put up by the Western New York agent, by my old friend, Dai H. Lewis.

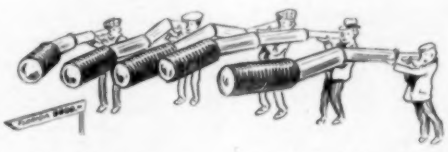
I found Mr. Butler in the center of a crowd, which had been listening to his enthusiastic encomiums on automobiling. "This is Mr. Butler," said Mr. Wagner, and for a moment I thought the gentleman was one of the *News'* reporters, then it flashed upon me that it might be the man who has been for 20 years prominently connected with our National and International Press Clubs. He I knew very well by reputation, though I had never met him. "Is this Mr. E. H. Butler?" I inquired. "The same at your service," said he. "Then allow me to shake your hand again," I said, to which Mr. Butler bowed and we shook.

Edward H. Butler has done more for the automobile and good roads than any other man in Erie county, and he took more interest in the Buffalo Automobile Show than the editor of any other paper did. Notwithstanding the fact that he has an army of capable reporters, he interviewed the "prominents" of the show himself, and I feel it no small honor to have been interviewed by Edward H. Butler, owner and editor of the undoubtedly great Buffalo *News*. Mr. Butler is a great story teller, and he kept the crowd roaring with stories about the trials and tribulations which automobiling had given him. He owns four machines, two electric and two gasolene, and like Oliver Twist, is looking for more.

Do you read the AUTOMOBILE MAGAZINE? I inquired. "I was reading it at 2 o'clock in bed this morning," he replied, "and I think you have a most excellent publication. By the way, you had a most excellent article in your February number on the care of an automobile, and I am going to reproduce it in the *News* since it is very instructive and should be read by every automobilist."

Mr. Butler will shortly go to Paris to deliver an address, and while abroad will do considerable touring in France and other countries, then when he returns Mr. Butler will be called upon to give a talk to the Buffalo Automobile Club on what he saw and learned in France.

There is a strong undercurrent in Buffalo which may give Mr. Butler the nomination for Governor. When this happens every automobilist in the State should constitute himself a stump speaker and organize a meeting at every cross road in his endeavors to make the great and good friend of the cause the head of the Empire State of the Union.



Sundry persons connected with newspapers, clubs, and the automobile trade, made many strange and wonderful discoveries in an automobile way in Florida this winter. I had no idea that my original enterprise down there would open the flood gates of such great ideas, and so overwhelm the people of Florida with original enterprises. For example, take that suggestion which came from Long Island and was so cordially endorsed by the New York *Herald's* famous automobile department, wherein it was proposed to build a wide automobile road from Palm Beach to Miami. The way the *Herald's* automobile expert told it was indeed very thrilling. The dream was something like this:

"There is already a road running north from Miami some 20 miles, being built largely by the counties, with, I believe, the aid of convict labor. The

distance from Palm Beach to Miami is about 60 miles, and the idea is to complete the 40 miles south from Palm Beach to connect with the Miami end of it."

I investigated the Miami terminal with a carriage, and found it to have a good macadamized surface, but not over 10 feet wide, with consequently no room for teams to pass. I don't know who is to spend the money to widen the road already made, and construct the rest of it to meet the plans on the *Herald* dream book, but I do know if any such thing is ever done it will have to be done by private enterprise, since the farmers of Dade county are not encouraging the building of public roads to be used for racing purposes. I am somewhat surprised that the Chairman of the A. A. A. Racing Board should allow himself to be used for the encouragement of any such plan which is so totally opposed to the best interests of automobiling. I am quite sure Mr. H. M. Flagler will not further any such project, as it is known that he does not intend to encourage anything which will disturb the quietude of Palm Beach. Had his attitude been different he would have allowed carriage roads to have been built there long ago.

The dream bookers also suggested that when this race road had been built to suit their ideas that the Florida East Coast Railway should run observation trains so sightseers could accompany the race. This *Herald* dream has made every cracker in Florida laugh himself sick. Fancy a train, the average speed of which is less than 40 miles an hour, keeping up with W. K. Vanderbilt, Jr., who averaged 90 miles an hour on the beach at Ormond-Daytona in the 50-mile race! If this was not funny enough, the fact that the road proposed is from one mile to three miles from the railroad with a dense forest between, readily gives you the climax of absurdity.

A well known gentleman who resides in Dade county said to me when he heard of the fool proposition: "If ever those New Yorkers come down here and make a public race track of our roads, there is a whole lot of Dade county people who will be taking pot shots at them."

To complete this splendid dream book scheme, here is another attraction the *Heraldites* might add to it: Anderson & Price, at Ormond, have a herd of Shetland ponies, every four-legged sawed off of which is extremely fond of running away, now why not hitch these little fellows to a watering cart in order to lay the dust ahead of Mr. Vanderbilt when he breaks records on the *Heraldic* road, which is to be built when two blue moons drop from the skies on the bronze backs of Messrs. Guff & Stuff, the bell bangers on top of the rumor factory at Thirty-fifth street and Broadway?

That bright young advertising expert, Martin H. Kelley, who has recently done so much in framing advertisements for the leading manufacturer, advanced a novel proposition to me recently, when I called on him in Toledo. I was asking Mr. Kelley if the report was true that Edward C. Bald, of Buffalo, was going to drive the Pope Toledo racer as reported through the East. Mr. Kelley smiled, and answered thusly: "It is not wise to employ one who is a public favorite to drive a machine or to do anything if you are seeking to make the article itself well known. In other words, we want the Pope-Toledo to get the advertisement and not the driver of it. We pay the driver for the purpose of advertising the machine and not for the machine to advertise him." I never heard the case put in this way.

but I am inclined to think that Mr. Kelley is right in the premises. It is safe to say that a certain Cleveland vehicle, for instance, is not receiving the advertising to-day that it did when the man whose name the machine bears was driving it himself. It is quite possible that this idea of Mr. Kelley's will prove to be a useful subject for debate during the coming dog days.

Cleveland has become addicted to royalty. The consequence is we see a lot in the public prints about Cleveland crowns and Cleveland kings, etc. The cause for all of this is difficult to discover unless it be that some of the boys got royal germs on them, while they were in Europe last summer, then as Cleveland has a nice thick atmosphere and plenty of wind and water, the germs have found it a splendid place to breed in.

One of these Cleveland self-proclaimed rexes is secretly testing at night a four cylinder vertical engine, which should have been on the market this year, as I suggested some time ago. If this had been done earlier there might have been a different tale to tell next fall, since a coming disaster might thereby have been averted.

The public is wiser on automobile construction than it was two years ago. Then you could have sold them machines "built" by E. J. Pennington two or three years ago; but not so to-day, my masters. You need now to advertise in all publications where only the festive sucker abides; being unwary he nibbles at crowns and such tawdry glitter as attracts his class, but the wise fish biteth not, and he's in the majority. But why test those four cylinders at night? Is the night more fitted for dark deeds, Macbeth?

While I am dealing with royalty I did see something in Cleveland the other day which will in a Royal way, I believe, "make good," since it really looked so royal that you could easily distinguish the thoroughbred from the cheap "kingly" imitation thereof.

The Royal Motor Car Company will, I think, make good their claim to being worthy of royal honors, and all the company asks is for the public to be judges. If the rival royal cars of Cleveland were placed side by side it would be a dollar to a plugged nickel that the recent Royal arrival would win out. The Royal Motor Car people have tried to produce a very high grade car at a moderate price, and as the company's expenses are very moderate, I see no reason why Manager W. J. McCrea will not succeed in doing so. Wisely enough, I think, he has confined the type of cars he has sought to produce to two, costing $2,300 and $3,000, respectively, the former being a 16 H. P., the latter 32 H. P. vehicle. These real Royal productions are a combination of the best French, German, and American engineering ideas, and former employees of French and German factories have joined ideas with the American constructionists, with the result that a very happy blend of intelligent constructive effort has been arrived at.

When you hear a man like E. W. Roberts hold forth in favor of the two cycle engine you cannot but think there must be a lot more in that form of power supplier than there is generally believed to be. I am reminded of this by reading an article in a French paper, wherein

is set forth in great detail how a French engineer who has been studying the two cycle engine finds that with it the consumption of gasolene is reduced, while there is much less tendency to overheat. To carry out his experiments he built himself a double cylinder two cycle motor and fitted it to a car. The engine develops 15 H. P. at a speed of 900 revolutions a minute; the cranks are set at an angle of 180 degrees to each other, There being an explosion at every revolution in each cylinder, there are 1,800 explosions or impulses a minute. He thus claims to get the same result from two cylinders as from a four cylinder engine of the ordinary type.

The Elmore Mfg. Co., when I called last week, showed me a real smart, beautifully finished combination touring car and runabout which is an up-to-date affair, and is to list at the easy price of $850. The Beckers, who are the controlling spirits of the Elmore plant, have certainly paid considerable attention to the finish of their vehicles, and in doing so they have not gone amiss. I have always been an advocate of a good article being well finished. In the bicycle boom days any sort of finish was good enough with most makers, but if you will glance at the bicycle which survives to-day you will see it is most superbly finished. The Elmore people complain that the railroads have doubled their freight rates. "While the weight of our vehicle is considerably reduced," said Burton Becker to me, "weighing now less than 1,250 pounds, the railroads charge us for 8,000 pounds. We paid $65 freight on a machine to Newark, N. J., yesterday, and it seems to me that the Interstate Commission could do good work in stopping what is evidently nothing but freight robbing game. Why automobiles should be discriminated against is more than I can fathom." President James H. Becker had this to say: "I notice that W. K. Vanderbilt, Jr., complains that the Seaboard Air Line, running to Florida, had charged him freight on 20,300 pounds, this being what the S. A. L. people seem to think his two automobiles weighed; but on second thought they are going to refund all charges over the actual weight of his machines, about 5,000 pounds. Now we are paying more than the original Vanderbilt charge and are paying it to a Vanderbilt line, at that, so if Mr. Vanderbilt wants to be still more popular than he is, he will intercede, in a freight way, for automobilists everywhere over his system."

There is no reason whatever why a National Automobile Show should not be given in November or December, I rather favor the former month. There is certainly no reason why manufacturers should give a show in January or February, when they should be at their factories getting out their spring goods for early delivery, and thereby prevent the great loss in sales through being unable to ship promptly. In the early days of bicycle making the late show was favored, but makers soon got sensible and gave their show in October or November. It was claimed in those days by the big makers that to give an early show would enable the smaller manufacturers to go home and copy the big fellows' designs. Now if any firm in the automobile trade has not the models of their next year's product ready by November or December it is dollars to doughnuts that such a firm will not figure very largely in sales during the ensuing year, since it takes more than a

minute to make even a working drawing of an automobile. Furthermore if a man wants to steal anything he can do so without going to any show, because there are any number of ways known to thieves in such matters, and these ways have always been found to work satisfactorily in the past. Then again what chance has an imitator even if he can copy, say in November, to get out his goods and advertise them and be ready for the spring trade?

If some of you automobile people who are boasting of your places of business want to see a really fine office and salesroom just trot up to the Knickerbocker Trust building, opposite the Waldorf-Astoria on Thirty-fourth street, and see those of John Dewar & Sons. These offices have the most superb appointments I have ever seen, and not the least of their many attractions is the square table on which the famous Scotch poet, Robert Burns, turned out his MS. This table came into the possession of the Dewars many years ago, and it was sent to America to ornament and give lustre to the beautiful Dewar offices over which my friend Frederick Glassup presides with such rare efficiency and success. Friends of the Scotch poet and admirers of Scotch spirit are always sure of a welcome by Mr. Glassup, who is not only a shrewd business man but an enthusiastic automobilist, yachtsman, clubman and all around good fellow besides.

It always amuses me when I hear the remark of a novice that he intends to have any automobile he buys equipped with solid tires, because of their greater durability as compared with pneumatics. Now, as a matter of fact, it is just the other way. A pneumatic tire well cared for will outlast by a comfortable margin one of the solid type. The latter cuts quickly, being ground to pieces between the stones in the street and the rim. With the pneumatic the air acts as a buffer and saves the outer cover from a very large proportion of the gashes it would otherwise get. I used to try and tell the Johnny-know-it-alls this, but I gave it up when they invariably came back at me with, "Of course, you would say so because only the makers of pneumatic tires advertise." Granting all this, still it is exactly as I have said, the pneumatic is a longer wearing tire than the solid. Believe it or not, just as you please.

Verily, it has been a long time since the politicians have struck so profitable and so defenceless an aggregation as the automobilists are. I was interested in that portion of the recent report of the Massachusetts Highway Commission, wherein it showed that under the automobile registration act of last year, 3,141 automobiles and 502 motor cycles were registered, and 100 manufacturers or dealers received certificates. There were 3,907 amateur operators and 692 professional chauffeurs licensed. The total receipts for fees for these registration were $17,684. All of which goes to show something of what it costs the Bay State automobilists not to be members and supporters of some sort of a national organization, which is competent as well as willing to fight their battles for them. Some day, maybe, automobilists everywhere will awake to the expensiveness of their present policy, and then we will see things different from what they now are.

Among the many other things a man learns when he undertakes to tour in an automobile is that dogs and chickens

are twin evils, and the two-legged evil is twice as stupid as the four-legged one. A chicken stands in the middle of the road and does its best to defeat the endeavors of the automobilist to avoid running over it. If he drives straight ahead the chicken will stand still; if he steers to the right or the left the chicken will make a frantic dive in the same direction, wings outstretched, neck craned and wild squawks of terror issuing from its throat. But if the car prove the juggernaut that puts an end to its existence, no material harm—save to the biped—is likely to result. A small body like that of a chicken is likely to be tossed aside without injury to the car. Dogs are considerably worse. If one is struck he may break or bend something, or cause the driver to lose control of the steering. On the other hand he is less likely to be struck. He may run after the car and bark at it, but it is only when he makes a miscalculation of the speed or of the distance that he comes in contact with it, whereupon there is trouble for all concerned.

In my former comments upon the enthusiasm necessary to make a successful automobile salesman I neglected to point out that unless this same quality at all times pervades each and every advertisement of an automobile, the money paid for such advertising is ill spent, to put it mildly. I have been a long time in this advertising game—a long time—and in that time have both bought and sold advertising, so when I say that unless there is enthusiasm of a pronounced character publicity loses much of its value, you can safely take it that I know what I am talking about.

An editor seeking to secure attention and interest for his work must write with enthusiasm if he would gain recognition of a lasting and substantial character. The orator will find that his words fall on unresponsive minds and hearts unless they are clothed with enthusiasm. The pulpiteer who would be popular and win abiding fame must expound with sincerity and enthusiasm else he will fail. So it is with the writer of advertising.

It is, to my way of thinking, well nigh impossible to write convincingly or entertainingly unless there is a foundation of positive enthusiasm underlying and inspiring the effort. No amount of fine writing, strained vocabulary, or unique display will make up for the loss of this characteristic, and the advertisement writer who does not recognize this condition is likely to go on groping in the dark and wondering at his lack of effectiveness.

Enthusiasm can never be made to order nor successfully simulated. It must be born of knowledge. He who aims to enlighten his fellows and to make his views theirs must know all about automobiles, or his enthusiasm will be of the spurious kind which lies lightly on the surface and makes little or no impression on those to whom it is addressed. The orator who ascends the rostrum to make a deliverance upon any subject must have such perfect knowledge of it as will cause his words to flow smoothly, freely and with the mighty power and enthusiasm which knowledge and truth ever inspire. The preacher who goes into his pulpit with only a superficial knowledge of his subject is bound to be a bore and a failure, and the advertising man who enters upon the preparation of an automobile advertisement will certainly waste his employer's money unless he is prepared to present the "whys" and "wherefores" of his particular make of vehicle and give adequate reason why they are more attractive and worthy of consideration than those with which they may be surrounded.

If he has not this knowledge let him get as close to the source of it as

possible. If the maker cannot be reached he should camp on the trail of the buyer until he has gathered from him the smallest fact that might have an interest for the reader or purchaser. Get hold of the trade papers and study the arguments which the manufacturer, jobber or wholesale man there presents to convince the retailer. Talk to the sales manager, and after you have talked him out of all he thinks he knows then talk to him again. Do all this and yet a lot more, and then, and then only, will you write that kind of an advertisement which sells the goods.

No man can knock around the country as I do and be known to be connected with automobiling without being constantly brought face to face with the universal interest there is in the motor vehicle. No matter where you go or with whom you are it is as certain as anything can be that you will be asked to explain or to instruct something or other about an automobile. The general impression among those who ask me questions concerning the motor car —and I must confess it seems as though every other person does this—is that the vehicle should be one which will run itself without any attention, and that all the owners need do is to take their seats much as they do in a railway train, and without any more attention to details than they themselves give to the working of the locomotive proceed equally as quickly and surely on their way. Most people have absolutely no knowledge whatever of the great care, watchfulness, and attention to detail that has to be given to secure the running of the locomotive, which is so much more simple as a mechanical contrivance, all things considered, than the ordinary, poorly constructed automobile is. They do not realize in the slightest degree the complexity of any form of road locomotive, and the much greater difficulties involved in its construction and successful working, and that it is this—far more than anything else—that has so long kept back its invention and introduction.

I do not believe I overstate the situation when I say that the motor car represents in its present form the results of some of the brighest and keenest inventive intellects all over the world; and if a man has not prepared himself to thoroughly master the details of its working, he must take care that he has a proper attendant, who is not a mere driver, but a skilled mechanic. It is from overlooking this fact that nine-tenths of the disappointment and annoyance in motoring come, but, on the other hand, everyone who has really taken the matter up seriously, and given the working of the motor car the attention it deserves, has been amply repaid —not merely in the pleasure which the vehicle gives from the sense of freedom and independence which being able to travel anywhere on the roads insures, but from the point of view of being equipped to move rapidly from place to place, starting the motor by the mere turning of a handle, which, if it is in proper order and properly cared for, may be trusted to go any distance without fatigue in all weathers, and to continue doing so, if necessary, twenty-four hours in the day.

The other day, in Toledo, I went into one of those stores where they sell you a leg or an arm, or appliances to strap your body together, so it will not fall apart. My particular quest on this occasion was a desire for one of those elastic bandages which I needed to help a lame ankle along. The polite sales-

man informed me that this Toledo concern did not keep exactly what I was after in stock, but he said he could make one of them to order in three days. In reply, to my wonderment, that they did not keep such a simple thing in stock, he explained that rubber is very susceptible to natural gas, which plays havoc with it, therefore they did not keep the bandage on hand since it would lose all of its elasticity. This gave me an idea, so I called on the automobile dealers and others and asked them what effect the natural gas had on tires. A new man in the business declared the bandage man's statement was a fairy tale or, as he called it, "a pipe." I interviewed some veterans in the business, however, and they said the man who sold limbs was correct, and that natural gas wound ruin any tire in a short time. So it would seem that it must cost more in the natural gas region to support an automobile than it would elsewhere. Incidentally, there is apparently an excellent chance for the tire doctors here, too.

Just a vagrant thought in passing. The more I see of some automobiles the more favorable I think of Shank's mare—the original mare, of course, not the mechanical one.

To attract attention to an advertisement of the vehicle you built is easy enough; but how to take care of this attention when you secure it—that is the question. To offend, to disgust, to disappoint the person whose attention is attracted to your announcement is to fail utterly. It were better that he had never heard of you or your business. Use any sensible means of attracting this attention. Then make sure that you take proper care of it. Use, preferably, an illustration, a catch-word, or a catch phrase that illustrates or emphasizes some feature of your vehicle; then when you have the reader's attention tell him just why you are paying out your good money for the privilege of talking to him by means of printers' ink about your particular make of vehicle. This is indeed simple enough, but hundreds of advertisers fail to do it.

If I was a manufacturer of automobiles, a buyer thereof or a man about to become either one or the other, I would add to my prayers: "God bless John Wanamaker." It isn't necessary for me to write a book to tell any thinking man why, either.

It should go without telling that the better a man is equipped educationally, and education implies travel as well as knowledge of books, the more thoroughly he is equipped for adwriting. Those who buy or who may be induced to buy automobiles are of many minds, and what will persuade one will have no effect upon another. A writer of any kind should be versatile. He should be able to study all moods and reach men convincingly. The more he knows, the wider his range of vision, the better he can persuade. If his vocabulary be limited, if his thought be circumscribed, his convincingness will be held within the limits of his own intelligence, and those who know more than he are not likely to be influenced by him, no matter what he is trying to sell.

The very best advertising of an automobile is that which takes one vital and telling point about the vehicle, and carries it home with enough distinctness and forcefulness, not only to attract attention, but to command results. The crowding of a large number points—especially isolated or badly connected ones—into a meager space, too much descriptive matter, or an overabundance

of unimportant or irrelevant details—any one of these methods is sure to lessen the interest of the average reader in the vehicle, and perhaps even leave a badly confused impression in his mind. One kind of advertising sends its message like a rifle, another kind like a shotgun, and although the latter may cover much more ground than the former it is far less valuable.

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When the history of the automobile industry comes to be written it will be found that the giants of it have been men of concentration, who have struck sledge-hammer blows in one place until they have accomplished their purpose. The successful men of the trade to-day are men of one overmastering idea, one unwavering aim, men of single and intense purpose. "Scatteration" is the curse of American business life. Too many are like a man I once heard Colonel Pope tell about, who could converse in twenty-four languages, but had no ideas to express in any one of them.

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Pardon me for saying so, but a man is himself a jack if he travels in an automobile and carries no jack with him. These very handy helps are now made small and compact enough to be stowed away without encroaching much upon the room devoted to other impedimenta, and its value in case of tire trouble is almost inestimable. Without it motorists frequently find themselves in unpleasant straits. A block of wood or similar appliance is not always easy to find, and even when it is the operation of raising the wheel from the ground is a much slower and more ticklish job than with a jack.

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Not every manufacturer is in a position to secure the very best of stationery, but there is one thing every one can do; if you cannot get the best example of lithograph work or printing that can be done, you can have your name, business and address printed in a neat, plain, Gothic type in the upper left-hand corner of your stationery. In some respects this makes about the best letterhead that can be made, as its simplicity and dignity never fail to make the right sort of impression. Its plainness and lack of ostentation carry the inference that there is something behind it besides hot air and catalogue.

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As the old mythology evolved the legend of the centaur or man-horse, so we may expect the new school of scientific romance to evolve an androcycle or man-wheel. Anyhow the centaur is entirely played out. For example, a friend of mine who rides a certain amount during one month of the year and motors a good deal during the remaining eleven, told me that the other day, having gone out on horseback after a long interval, and wishing to pass some obstacle in a narrow lane, he found himself instinctively feeling for his speed lever on his horse's neck.

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With the Florida myth of sand destroyed carbureters well in mind I am moved to advise my readers that whether they are believers in this Florida fairy tale or not it is advisable that the carbureter of a vehicle should be periodically removed (about every 750 miles), dried and carefully washed out with fresh gasolene. In this way particles of dirt and any water which may be present are got rid of, and the chances of trouble on the road lessened.

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Remember me telling you a couple of issues ago about the individual who had forgotten his long list of failures and ever increasing list of enemies, and who was preparing to add materially to both of the lists? Well he's done it. Even

his own associates couldn't stand him any longer, and so they had a receiver placed in charge of the blunderer's business in Thirty-eighth street. I never saw a finer example than this man's career affords of how in the end the world always weighs up a man at his true worth. You can't travel forever on a capital composed solely of arrogance and assertion. This fact, however, despite the many practical proofs the individual in question has had to the contrary, since he first broke into automobiling via the blue-print-I'm-it route, seems as yet unknown to him. Some people are so constructed that nothing short of a surgical operation will put anything into their heads, and in the present case I don't believe even that heroic treatment would succeed.

There are lots of people in automobiling who wouldn't tell a lie under any consideration, but who are nevertheless very clever at side-stepping when they find the truth is embarrassing.

The automobile trade undoubtedly has among its members many great hunters. But I am sure there is not among all of them a more enthusiastic one than my old-time friend, C. C. Hildebrand, the man who directs those ever increasing sales of the Stevens Duryea. Last fall Mr. Hildebrand jumped into one of his automobiles and headed for the Maine woods in the quest of big game. On his arrival at the woods he engaged a guide and was soon in the dense forests, and once there he hit up such a pace that the veteran guide asked him if he was an old six-day walker. No hunter expects to be immediately rewarded in the Maine woods. Indeed, some of them are w lling to spend a month there in order to bring down a buck, or what is more prized, a giant moose. The second day out the guide noticed the marks of a moose and Hildebrand took up the trail; on giving the moose call they were rewarded by an answer. Eventually, after careful work, a big bull moose hove in sight, and it was a sight that Hildebrand says he will never forget, as the great king of the forest with towering head and wide spreading antlers made the forest ring with his challenge to the unseen foe, which by instinct the noble creature knew was around.

Hildebrand, with finger on trigger and his nerves all tensioned, waited for the next move, and it came when the moose made another step. Crack went the Stevens rifle and the bull was hit, but this did not stop him, he came tearing furiously toward the place where the shot came from, with blazing eyes and extended nostrils. Stepping out in the open Hildebrand dropped to his knee and taking careful aim sent another bullet to a vital part, the huge creature dropping to the ground almost within gun reach of the huntsman, who felt the hot breath of his victim on his face. It a moment of peril and the scene was was one that a great painter would have liked to have seen.

The roar of the moose and the reverberation of the shots in the forest were the only things Hildebrand remembered as he was too intent on stopping of the furious rush of the wounded and desperate animal. Another time the rifle spoke and it was all over. One more moose fell to the gun of either Hildebrand or his guide. It is not certain which of them did the killing of the second one, because the Maine laws, wisely I think, prohibit any hunter from killing more than one moose during the season. There is one big moose head at least in Mr. Hildebrand's office at Chicopee Falls, and a big moose hoof which he uses for an ink well. Hilde-

brand is only a little chap, and was born on an island in the Missouri river, which has since been washed away. It is Hildebrand's old Missouri training, I have always thought, which explains why you have always to "show" him before he will believe all you tell him.

Before we took Hildebrand to Florida we stuffed him a little about the number of deer and bears which could be found on the beach at Ormond-Daytona, whereupon he got greatly excited at the news and made me promise to go with him, which I agreed to do if he would protect me from the bears. This he readily promised providing I kept well behind him, as he had a gun and a long knife. We discovered bear tracks on the beach, which I am inclined to believe some of the jokers made for Hildebrand's benefit. I hunted all over town for a stuffed bear which I wanted taken into the woods for Hildebrand to discover, but not even a stuffed bear could be found in Florida. I think it was a good thing for that stuffed one that he was not found, because I am inclined to believe that he would have needed repairs after Hildebrand got through with interviewing him with gun and knife.

But Hildebrand had revenge. Peters, the local agent, took him out in a Stevens-Duryea, toward Port Orange, and while going at about twenty miles an hour a great hawk was sighted over the road, and Hildebrand promptly winged him, then while putting him in a basket Mr. Hawk bit Mr. Hildebrand's finger through. Sort of a wing and wing performance. The hawk, very much alive, was to be taken the next day to a taxidermist for mounting, and in the meantime was left in the basket. Next morning when Mr. Hildebrand went to get the hawk he found the basket empty. A search was made, and the hawk was found perched up near the ceiling and blinking savagely at the crowd. A revolver shot brought him down, the shooting being done by the hawk's original enemy. The former Florida inhabitant is now perched over the Hildebrand desk at Chicopee Falls.

"Tried and True"! How many people have read that slogan in many lands? It has a confidence-begetting ring about it which invariably carries weight. It sounds like an advertising claim. It is one. It is made by the George N. Pierce Co., of Buffalo, N. Y. I know it is true, because I have tried it, with one of their bicycles which I have been riding the past two years, and I have always found it true! This Buffalo company is no fledgeling, for it has weathered the storm of many business winters and always successfully. The George N. Pierce Co. is one of those concerns which believes in itself, and that is the reason why the public believes in it. When other companies flooded the bicycle market with cheap machines that were distinctly cheap in every way, this Buffalo concern held a straight course and kept their banner proudly waving with the motto emblazoned thereon: "Tried and True"! It is the same way with the Pierce automobile business. The Pierce people will not allow themselves to be stampeded from their well thought out plans and careful preparations to give the public what they earnestly believe to be "Tried and True." In Messrs. Clifton and May, George N. Pierce has reliable and careful assistants.

Captain Warburton, of the Philadelphia *Telegraph*, told me that after looking over nearly all the automobile factories and their managers, he had picked out one man who he placed at the top, and that man was Charles Clifton, of the George N. Pierce Co.

After seeing Mr. Clifton many times,

and having sized up the results of his efforts—which after all count the most—I'm inclined to second the opinion Captain Warburton has of Mr. Clifton.

Oil is a good thing in its place, and like other good things it becomes a bad one when displaced. What it will do for tires everyone knows, but the injury it will do to mica is unknown to most people. According to certain careful experiments, it has been found that the contact of oil considerably lessens the insulating properties of the mineral. A plate of mica, which resisted an alternating current of 16,000 volts when dry, allowed leakage of a current of 9,000 volts after it had ben soaked in paraffin. In another experiment, wherein the sheet of mica resisted a current of 8,000 volts, the same sheet fell a victim to 4,000 volts after it had been soaked in the oil. The same results were observed after the mica had been treated with ordinary lubricating oils.

"Most of our troubles in life," said Mr. L. A. Hine, of the Hine-Watt Mfg. Co., Chicago, Ill., to me not long ago, "come to us, because of our ignorance and through our not understanding things. It is our fault to a great extent because we do not trouble to study things as we should. I venture to say that 90 per cent. of automobile troubles can be directly traced to the ignorance of the owner or operator of the machine. When I say ignorance, I mean lack of knowledge by the operator of the machine.

"For instance, our concern is constantly advising buyers of our automatic automobile and bicycle gas lamps, not to monkey with the water valve since the flame is controlled through the gas valve, and a child can regulate that. We try to keep these things always before our customers and I consider it a good policy to do so, since if we succeed it saves a lot of unnecessary trouble later on. The water feed in our lamps takes care of itself because it really is automatic, hence the flame is the only thing needing any attention at all on the part of the user. When he is through with the light, once he turns that down the flame goes out. I am now speaking as a practical lamp maker, and I have no doubt other lamp makers have had the same troubles I am telling you about. I am glad to say though that the public are getting to understand the use and the care of lamps, so complaints are few and far between now."

Mr. Hine, who is now sole owner of the Hine-Watt Mfg. Co., which started lamp making seven years ago, when there were about thirty lamp makers in the field, and he observed that out of that thirty there are only three surviving to day. The Columbia bicycle gas lamp has to-day a sale of over fifty thousand lamps annually, and the success of the Columbia automobile lamp bids fair to equal it.

In Holland an automobile is called a "suelpaardeloozonderspoorwegpetroolryting," but when a cop calls upon a Dutch scorcher to stop he only recites the first chapter; otherwise the offender would be in the next county before the officer could have finished hailing him.

I have more than once written of the Autocar factory at Ardmore, Pa., but every time I go there I see new evidences of enlargements and continued progress. The Clark Brothers are certainly deserving of great credit for the substantial and rapid strides they have made in automobile building. Without fuss, bluster or preposterous claims of any kind, the Autocar people have done

an immense business, in fact it is doubtful if there are three other concerns in this country which have made as much money. The brothers Clark have made a machine that has brought credit both to themselves and to the automobile industry, with the result that they were great factors in helping to popularize a more or less experimental business at its very start. It is quite true that the Clark Brothers had the sinews of war in abundance to carry on their business with, but they had also intelligence, business judgment and mechanical ability to back up their capital. The engine of the Autocar which has done such great work, was designed by Louis S. Clark, president of the company. The tremendous increase in production in 1903-1904 is largely due to the excellent factory organization and discipline inaugurated in the Ardmore factory by Superintendent John C. Spiers, a noted and successful shop organizer, who is now working some three hundred men or more in the beautifully situated Autocar plant. The runabout member of the Autocar family is a new comer this year and the first of them are now about ready to be shipped. The little fellows will list at about $900, and will have unusually high powered engines for vehicles of their description. While in Florida recently I visited President Clark, whose family are Palm Beach cottagers of "the oldest citizen" order. The Clark family was at Palm Beach before Mr. Flagler was, even before his railroad was built so far south. The father of the Clark boys bought a large tract of land extending from Lake Worth to the sea and which is now very valuable. Mrs. Clark, the mother, has a most magnificent cottage, which was designed by Louis S. Clark for his father, and on either side of the mother's cottage are others almost as equally as beautiful occupied by the two sons, Louis and John. The three cottages are situated on the bank of Lake Worth and are surrounded by cocoanut palms, royal palms, orange trees, and a variety of tropical plants. A stone's throw away is the beautiful residence of Henry M. Flagler, known as White Hall. A broad walk runs along the lake front shadowed by cocoanut trees, and there are also roads known as "trails" running from the lake to the ocean, one of them being known as Clark's trail. The only drawback to Palm Beach is the lack of automobile roads, hence everybody goes around there even, out into the woods, in bicycle chairs propelled by one-man power negro motor.

The glad manufacturer will welcome the many new automobile and boat papers that are to be launched on the more or less troubled sea of newspaperdom. There is a "boat motoring" and a "motoring boat," and an "automobile boating," and several others coming out. And "boat motoring" would suggest that the boat is going to do the motoring. Beware ye pirates! I now lay claim, and sole proprietorship to a title for a new paper, and Weber & Fields will call it "Motoring-Boatering." Now I've got you!

Getting advertisements is not easy. This is a fact, not an imagination, I being in a position to know exactly whereof I speak in this matter. Being a difficult thing to accomplish various methods are adopted to land an advertisement. Some of these expedients are legitimate, others are—well, I'll give you a sample and let you decide for yourself. Not long ago there landed in this country a Frenchman, whose love for publicity, when it costs him nothing, is world wide. Now if there is anything this particular Frenchman loves more than gratuitous publicity it is the money

begotten thereof, so you can imagine how well pleased he must have been when he was induced to advertise under the following conditions which, however strange they may seen to Americans, are, so I have been told, considered quite proper in France, and most other continental countries.

A card, with a foreign enough name npon it, was sent to the Frenchman's room in the hotel he was stopping at, with the penciled information on the reverse side of the card that it was a matter of vital importance to the Frenchman that he see the owner of the card at once. Wondering what was wanted, the visitor was told to proceed to the Frenchman's room. The thing was all over in a minute. They don't waste time in such trivial matters among foreigners. The visitor, in the Frenchman's own language, informed him he wanted 15,000 francs, that is to say about $3,000, as you and I, who are not Latins, would figure it.

The Frenchman, familiar as he was with the peculiar ways of continental journalists, was a bit surprised because you see he did not know that there was even one exponent of continental journalism over here. The explanation was short, it was also most convincing. The visitor showed the Frenchman two papers, one was an advertising contract calling for so many pages of advertising in the visitor's paper, enough per page to total up $3,000, the other was a story in print showing up, among other things, that the Frenchman wasn't even entitled to the name he had so long claimed as his own. They do business expeditiously in such cases, these Latins, so when a few minutes later the visitor left the Frenchman's hotel he had a $3,000 advertising contract and a check to pay for it in advance, while the Frenchman, he had only the story of himself, and an intimate knowledge of just how it feels when it comes to a case of dog eat dog.

If we could only deceive others as easily as we deceive ourselves, what great reputations we would have as expert motorists!

The less mystery there is about an automobile the better for all concerned. It is far too general an opinion among those who may buy, but who never think, that the automobile is something which only a mechanical expert and a trained engineer can ever hope to understand. Nothing will so quickly dispel this idea as to have the ignorant one visit the factory where automobiles are made and there see all of the various processes entering into the upbuilding of the vehicles. The Locomobile Company have been quick to appreciate this and have arranged that anyone interested shall be taken through the company's really ideal plant at Bridgeport. Such an experience, whether the visitor eventually buys an automobile or not, is of advantage not only to the Locomobile people, but to automobiling in general, since the result of any such investigation does more to rob the motor vehicle of all mysteriousness than any amount of argument. It would be a fortunate thing if more concerns followed the Locomobile's example and sought to induce people to go and see what a safe and well made thing a first class automobile really is.

Remember in planning your advertisement that a good head-line, if in large type and of great brevity, is really an illustration. Indeed, many advertisers prefer it to a picture, because the right kind of a head-line is not misleading, and is instantly absorbed by the reader, while a picture, and even a good one,

may illustrate something which the advertiser does not care to bring out prominently. The public can sometimes misunderstand a picture, but it is not likely to misunderstand a brief headline or short text. It would seem that the golden rule of advertising is to use illustrations only when they illustrate, and to use strong head-lines the rest of the time.

There are all kinds of insurance nowadays, and the wise automobilist feels as though he needed a bit of every single one of them. Heretofore the insurance people have seemingly been afflicted with the most acute kind of commercial strabismus when it came to casting an eye toward either the automobile or its owner. The prices and the conditions imposed by the insurance people really meant that if the automobilist was willing to expect nothing for his money and was content to give all of that to the insurance people they would guarantee him against—having his money returned. Things have changed lately for the better, and now a really live New York firm has induced a reputable company to protect the owner as well as the automobile in a satisfactory and not too expensive fashion. The concern which has at last succeeded in securing this much needed protection for the vehicle and its owner is Messrs. Samuels, Cornwall & Stevens. These gentlemen should be given the heartiest possible support on the part of the automobilists, since I am sure they never won the concessions they have gained from the insurance people without considerable effort and no small amount of persistency, and now they should get their reward in the shape of a flood of business, which I am sure will certainly come to them.

A confiding public cannot be continually deceived, a dissatisfied customer must be taken care of—he must get what he pays for and what he expects, in a vehicle, or he must have his money returned. The man who attempts to sell automobiles in any other way cannot do it successfully, and he ought not, for the foundation of commercial success is in giving value for the money expended, and in treating customers honorably. If an automobile manufacturer cannot do that, competition will drive him out of business, and it ought to.

If the growing expertness of the road scorcher could be accompanied by a corresponding diminution of his speed madness the so-called "automobile peril" would be lessened. But to restrain the desire to go fast in one who has the means is to change the American temperament, and all who think to do this by legislation or persecution will in the end have only their labors for their pay. Just what the real remedy is I am not at all backward in declaring I do not know.

Out in Detroit they told me of a friend of the author of "Peck's Bad Boy" who had the misfortune to encounter an angry bull who declined to allow the automobilist to proceed along the road until man and machine had proven their superiority over bull and bellow. All this was not accomplished without some injury to both animal and vehicle, whereupon Ex-Governor Peck wrote his bull baiting friend as follows:

"I have read your experiences with the bull, and in discussing the matter as to what I would have done in your place I am sure I have convinced my wife that I am a brave man. I have told her I would have changed ends with the vehicle, suddenly raised a red flag, and when the bull charged into the hind axletree, I would have exploded the gasolene tank and had roast beef rare done with the

hair on. If I were in your place I would arrange a Gatling gun on the dashboard, loaded with rock salt, and the next bull would get killed and salted at one discharge and you would have corned beef in plenty. Then you might take along some empty cans and a soldering iron and can a lot of embalmed beef. I would put a set of steer horns on the bow of the vehicle and a couple of mule hind legs on astern, so it could hook or kick, as the case might be."

It is not recorded that the Pecksonian advice was followed by the automobilist to whom it was given, but you will admit it was original advice at any rate.

It is well to know that an accumulator or a storage battery can be recharged from any source of electric current, such as a primary battery, a small dynamo or current from the mains of a supply company, provided that the current is continuous and not alternating. Whichever method is adopted in charging accumulators, the pressure and quantity of current must be suitably regulated according to the pressure of the charging current and the number of volts of the battery to be charged. The best method of charging is from a continuous-current service. When this method is adopted the accumulator is inserted in the circuit of one of the lamps used in the house, so that the current flowing through the lamp also goes through the accumulator after leaving the lamp before it returns to the main. In this way, if the lamp does not exceed 32 c. p., a current of not more than one ampere will flow through the battery.

It is a matter of the greatest importance to absolutely know that all nuts, bolts, and working parts of the car are in perfect order. To accomplish this the closest scrutiny must be given at frequent intervals. An experience which might under other circumstances have led to a serious accident shows the necessity of this.

In descending a hill at a moderate speed recently I was astonished to find the steering wheel loose in my hands. Fortunately the wheel did not absolutely leave the steering column, and so it was immediately forced back again into its place, while in the meantime the motor was unclutched and the brakes applied. When the car was stopped and the cause of all the trouble was looked into it was found that the nut holding the steering wheel to the column had not been screwed up sufficiently tight, and becoming detached through a slight bump of the car had nearly thrown the wheel out of the steering connections.

Had this happened with a reversible steering gear there is not the slightest doubt that a catastrophe would have resulted.

It is a mistake for the manufacturer to presume that the public is familiar with his wares. In writing ads it's a good idea to assume that people generally know nothing at all about your business or the goods you sell, and that it is your especial duty and privilege to enlighten them on these points.

While some of those who are drawing fat salaries as chauffeurs are "jack of all trades and good at none," others aplenty there are who are jack of no trade and good at nothing.

Fools and their money are soon parted; but a good deal of the money finds its way into the hands of other fools, as you will readily see if you cast only a casual glance over the automobile world.

THE SENATOR.